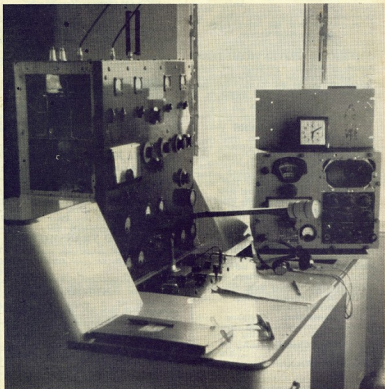


AUGUST, 1961



AMATEUR RADIO AMATEUR RADIO AMATEUR RADIO AMATEUR RADIO



Situated in the centre of Australia at Alice Springs, an active group of Amateurs make top quality transmitters even though they are over a thousand miles from any radio supply house. The unit pictured belongs to Frank VK8AE.



RADIO
RADIO
RADIO
RADIO
RADIO
RADIO
RADIO

AMATEUR RADIO

"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

5A MELVILLE STREET, HAWTHORN, VICTORIA

North Balwyn Tram Passes Corner.

Phone 86-6465

Money Orders and Postal Notes payable North Hawthorn P.O. Packing Charge on all goods over 10 lbs. in weight, 5/- extra

NEW TAPE DECKS

"Collaro" Studio Type, Model BM-2.
Three Speed. Price £31/8/4.

Collaro "Studio" Stereo Tape Decks.
Price £37/5/-.

VARIABLE CONDENSERS

(Ceramic)

Small screwdriver adjust., 25 pF., 55 pF., 80 pF., 7/6 each., 3 for £1.

Small 50 pF. double bearing, 1" shaft, new, 12/6 ea.

Split stator single gang, 50 pF., medium size, 10/- ea.

Split stator two gang, 60 pF. per sec., medium size, 15/- ea.

Trimmers, Ducon, 4-30 pF., 3/6 ea.

Philips air trimmers, 3-30 pF., 3/- ea.
Compression trimmers, c.t. 3-55, 1/- ea.

TECH MULTIMETER

300 μ A. movement.
AC and DC voltages:
0-10, 0-50, 0-250, 0-500,
0-1000V.
Current ranges (mA):
0-1, 0-100, 0-500 mA.
Ohms range: 0-100,000
ohms.
Size: 3 1/4 x 2 1/4 x 1 1/4
inches.
Complete with leads.



Price only £2/17/6, post paid.

CO-AXIAL CABLE

100 ohm co-ax. cable, 3/8" diam., 2/- yd.
98 ohm co-ax. cable, 3/8" diam., in 100
yard rolls £5, or 1/3 yard.
50 ohm co-ax. cable, 3/8" diam., 2/- yard
or £8/15/0 per 100 yard roll.

FILAMENT TRANSFORMERS

2.5 volts c.t., 10 amp.; 12 volts 3 amp.
New. "S" Power Supply type. £3/0/0.

FERROCARB VACUUM TUBE VOLTMEETER

V.T.V.M. £19/17/6 inc. tax
H.V. Probe £3/5/0 inc. tax
R.F. Probe £2/10/0 inc. tax

STEP-DOWN TRANSFORMERS

230 volts to 110 volts, 1kV., £8/10/0.
230 volts to 110 volts, 500W., £6/10/0.
In case.

NEW VALVES—Just Arrived!

6K7 metal, 5/- each 5 for £1.
6Y6, 5/- each 5 for £1.
30, 1/3 each. 805, £3 each.
6SN7, 12/6 each. 6SL7, 12/6 each.

THIS MONTH'S SPECIALS

SCR522 RECEIVERS

Incomplete; ideal for wrecking.
To clear, 19/6 each.

V.H.F. RECEIVERS

Type R89/ARN-5A. 300 Mc. Valves:
seven 6AJ5s, two 12SN7s, one 12SR7,
one 28D7, six relays, and three crystals
of 6322.9 Kc. As new. £5 each.

1155 GENEMOTORS TYPE 34A

Input 9.3V., output 225V. at 110 mA.
Complete with relays and filters, in
case. Weight 30 lbs. 19/6 each.
5/- handling charge.

AMERICAN POTENTIOMETERS

American Bradley, 2" long, 1/2" shaft,
1" diam. Available in following sizes:
20,000, 25,000, 30,000, 50,000, 100,000,
250,000 ohms, 1 and 2 megohms.
Price 2/6 each.

V.H.F. RECEIVERS

English Type S.L.C. No. 4. The freq.
is unknown. Contains two VU39As, two
VR136s, two VR66s, seven VR65s, six
EA50s, one VT127, J50 dry rectifier,
five i.f. trannies and high cycle power
transformer. In metal case 19 1/2" long,
8 1/2" wide, 9" deep. Brand new.

35/- each plus 5/- handling charge.
No Information Available.

SPECIALS!!

7-Pin Miniature Valve Sockets and
Shields. New. 15 for £1.

12SA7GT valves 10/- each
USA Ampenol Coaxial Plugs, 5/- ea.

Morse Key and Buzzer Sets, new, 12/6
SCR522 28V. Genemotor power supply,
20/-, 5 packing charge.

T1154 Transmitters. Complete with
valves and meters. Good condition.
Few only. 45/-, 5/- packing charge.

English Filter Chokes, 40 mA., 100 ohm
resistance 3/6 each

Carbon Mike Transformers, small, new,
..... 5/- each

No. 19 TRANSCEIVERS

Mk. II. Aust. type. Freq. range 2-8 Mc.
Complete with genemotor pwr. sp. £10.
Less power supply £8.

All parcels sent ordinary post unless
otherwise stated.

RECORDING TAPE

TMK "Syncrotape" 7" Rolls, PL-12
(Standard) £1/16/6

TMK "Syncrotape" 7" Rolls AC-18
(Long Play) £2/10/6

BC433-G COMPASS RECEIVERS

Freq. range 200 Kc. to 1750 Kc., 14
valves—6.3 volt series, 6K7, 6J5, etc.
I.F. freq. 142.5 Kc. Clean condition,
Priced only £10/0/0

Flexible cable & control box 30/- extra.

JAPANESE METERS

0-1 mA., 2 1/2" square, MR-52 £2

0-1 mA., 1 1/2" square, KM-17 £2

0-1 mA., 3 1/4" round, MR-65 £1/15/0

PIEZO CRYSTAL MICROPHONE

Price only

57/6



Stand to suit
15/- extra.

Model BM3 (illustrated). Response 100 to 3000
c.p.s., fitted with 6 ft. cable and phone plug
with on-off switch. Can be used on stand for
hand use.

WELL KNOWN SPEAKERS

5" x 7" oval type, new, 75L, 35/- ea.

NEW VALVE TESTERS

Tech Model TC-2. 230 v.a.c. Checks all
latest valves. Complete with instruction
book. Wt. 14 lbs. Price £16/17/6.

COMMAND TRANSMITTERS

3-4 Mc. range £7

4-5.3 Mc. " £5

7-9 Mc. " £6

METERS

0-4 amp. r.f., 3" round with shorting
switch 20/-

POWER TRANSFORMERS

410 volts aside, 80 mA., 12.8V. at 1.25A.,
5V. at 2A. 40/-.

SCR522 TRANSCEIVERS

Freq. 100-156 Mc. Reconditioned and
modified 1956. All valves including
832As. £7/10/0. 5/- packing charge.

GENEMOTORS

Command Receiver Genemotors, 28V.
input, 250V. 60 mA. output, new, 25/-

AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

EDITOR:

K. M. COCKING, VK3ZFQ.

PUBLICATIONS COMMITTEE:

G. W. BATY, VK3AOM.
S. T. CLARK, VK3ASC.
J. C. DUNCAN, VK3VZ.
R. S. FISHER, VK3OM.
R. W. HIGGINBOTHAM, VK3RN.
E. C. MANIFOLD, VK3EM.
A. ROUDIE, VK3JJ.
J. VAILE, VK3PZ.
L. T. WHITE, VK3ZEW (Cartoons)

ADVERTISING REPRESENTATIVE:

C/o P.O. Box 36, East Melbourne,
C.2, Vic. Telephone: JA 3535.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence
should be forwarded to the Editor,
P.O. BOX 36,
EAST MELBOURNE, C.2, VIC.,
on or before the 8th of each month.

Subscription rate, in Australia and
Overseas, is 24/- per annum, in
advance (post paid).

Wireless Institute of Australia
(Victorian Division) Rooms' Phone
Number is JA 3535.

WI BROADCASTS

All Amateurs are urged to keep these
frequencies clear during, and for a period
of 15 minutes after, the official Broadcasts.

VK3WI: Sundays, 1100 hours EST, simultane-
ously on 3575 Kc., 7146 Kc., and 145.0
Mc. Intrastate call-backs taken on 7050
Kc.

VK3WI: Sundays, 1030 hours EST, simultane-
ously on 3573 and 7146 Kc., 51.016 and
146.25 Mc. Intrastate hook-ups taken on
7138 Kc. Individual frequency checks
of Amateur Stations given when VK3WI
is on the air.

VK4WI: Sundays, 0900 hours EST, simultane-
ously on 7146 Kc. and 14.342 Mc. Intra-
state hook-ups taken on 7105 Kc.

VK5WI: Sundays, 0900 hours CAT, on 7146
Kc. Intrastate hook-ups taken on 7125
Kc. Frequency checks given when VK-
5WI is on the air and also by VK5MD
by arrangement.

VK6WI: Sundays at 0930 hours WAST, on
7146 Kc. Intrastate hook-ups taken on
7085 Kc.

VK7WI: Sundays at 1000 hours EST, on 7146
Kc. and 3672 Kc. Intrastate hook-ups
taken on 7115 Kc.

Published by the Wireless Institute of Australia, Victorian Division,
478 Victoria Parade, East Melbourne, C.2.

Postal Address: P.O. Box 36, East Melbourne, C.2, Vic.

EDITORIAL

★

REMEMBRANCE DAY CONTEST

AUSTRALIANS don't have to be
reminded that there was a
World War II. in which a great num-
ber of the men of our fair land lost
their lives in defence of their
country.

But some of us forget, as the years
go by, that the freedom we enjoy
today was because of the sacrifice
of those men, some of whom were
Amateurs. Although we respect the
memory of all who paid the supre-
me sacrifice, it is during August
every year that we particularly pay
tribute to those of our Australian
Amateur ranks who "died that we
may live". It is in memory of them
that the Wireless Institute of Aus-
tralia organises its Remembrance
Day Contest.

Each year brings to this Contest
a larger and larger number of Am-
ateurs, keen to participate in sup-
port of their State total and eager
to accrue as many points as possi-
ble in the hope of being top scorer.

This popularity for the Remem-
brance Day Contest is well merited
but do not let us be so carried away
with the operating zeal that we for-
get why we have this Contest and
are privileged to participate in it.
Let us all—at least in the opening
few minutes—have the courtesy of
maintaining the two minutes silence
after the conclusion of the opening
speech, which, each year, has been
spoken for us by notable members
of the community in each State.

This year we are privileged to
have our Contest opened by the
Governor of New South Wales, His
Excellency, Lieut.-General Sir Eric
Woodward, K.C.M.G., C.B.E., D.S.O.,
and the Wireless Institute asks all
Amateurs to listen for the fifteen
minutes preceding the opening of
the Contest at 1800 hours E.A.S.T.
on 12th August so that the words of
Sir Eric Woodward will be heard
and the two minutes silence ob-
served.

In past years some Amateurs have
commenced operation prematurely
due, no doubt, to the fact that their
watches and clocks were ahead of
true time. This year we ask all those
who read these words to check the
time accurately so that the W.I.A.
broadcasts in each State broadcast-
ing the opening address of the Gov-
ernor of N.S.W. will not have their
transmissions spoiled.

This is a worthy Contest. If you
haven't been in it before make sure
of participating this year. If you
haven't the time to operate for long
—and many are in this position—
then at least come on long enough
to make those minimum contacts in
order to submit a log.

They shall grow not old as we
that are left grow old,
Age shall not weary them nor the
years condemn,
At the going down of the sun and
in the morning
We will remember them.

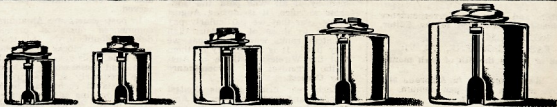
FEDERAL EXECUTIVE

THE CONTENTS

"See You, Up Two"	3	Prediction Chart for August '61 10
How Important is the S.W.R.?	5	Queensland (the Sunshine State)
Transistor Radios—Part One	7	Division's Annual Convention at
F.C.C. Announces Amended Re-		Nambour
sults—VK3ARZ Wins the Ross		VK6VF—A 50 Mc. Beacon Trans-
Hall V.h.f. Contest	7	mitter
Two-Way Radio Officially Hand-		DX
ed Over to Burnie Fire Brigade		Notes
VK-ZL DX Contest, 1961	8	Sideband
W.I.A. Federal President's An-		SWL
nual Report, 1960-61	12	VHF

NEW VINKOR SERIES

Covers frequencies from 100 Kc/s to **3** Mc/s



A new series of Vinkor adjustable pot cores has been developed by Mullard for use in the frequency range 100 kc/s to 3 Mc/s. This series is in addition to the highly successful group already widely used for frequencies between 1 kc/s and 200 kc/s.

The world's most efficient pot core assembly, the Mullard Vinkor gives a choice of 3 permeabilities and has exceptionally high performance and stability. Write today for full details of the wide range of Vinkors now available.



Mullard VINKOR

ADJUSTABLE POT CORE ASSEMBLIES

MULLARD AUSTRALIA PTY. LTD., 35-43 CLARENCE STREET, SYDNEY. 29-2006 AND 123-129 VICTORIA PARADE, COLLINGWOOD NS, VIC. 41-6644
ASSOCIATED WITH MULLARD LIMITED, LONDON

MY113

"SEE YOU, UP TWO"

C. G. HARVEY,* VK2AQU

TO an a.m. addict, such a request for QSY would generally achieve nothing. Whilst the heterodyne from adjacent channel stations would change in pitch, QRM would be reduced but little. A minimum QSL of 6 and probably 8 kc. would be necessary to provide a satisfactory channel.

Sidebanders, however, soon find how easy it is to slip out of a VOX roundtable for a few words on the side. Even in "kilowatt alley" a move of 3 kc. is generally sufficient to allow most W sidebanders to go their separate ways without intentional QRM.

The clue to success lies largely in the receiver, particularly in the slope factor of the i.f. passband.

Those of us who now frequent those parts of the Amateur spectrum where most stations have restricted their transmitter response to an upper limit of 3½ kc., and rejected the carrier and one sideband, see little sense in allowing the receiver passband to exceed the same figure.

The bonus in improved signal-to-noise ratio, reduced QRM plus the improved channel availability, justify the small effort involved. In the debit side, most a.m. stations now sound poor unless they have ample audio in the lower 3 kc., and are free of f.m. C.w. of course is unaffected, once the technique of dropping interference off the edge of the passband is learned.

The graphs and comment which follow, summarise work with an old Hammlund model RBG Super Pro. At the end of the experiment, VK2AQU was the happy owner of a more selective receiver than the current heart throb, the Drake 2A. As all the accompanying curves are drawn to the same scale, comparison with the Drake's response is easy. I wanted to equal or surpass 2.4 kc. 6 db. down, and 7 kc. wide 55 db. down. Fig. 6a shows that this succeeded, and the next few paragraphs will show that it was a relatively simple project.

The original passband of the Super Pro is shown in Fig. 1, and is recognised as being better than most. In fact the hardest part of this project was making up my mind to tear perfectly good commercial filter to pieces!

PLOTTING A CURVE

To run curves like this, proceed as follows. Disable the local oscillator. Couple a stable sig. gen., such as the Bendix frequency meter, to the mixer grid through an attenuator, such as a 5K potentiometer, and if necessary, an isolating capacitor. The receiver S meter provides a handy means of observing the I.F. response, particularly where the initial calibration approximates 6 db. per S unit.

Now, with a.v.c. off and r.f.-i.f. gain about normal, swing the sig. gen. across the i.f. passband, adjusting the attenuator for S9 at the frequency which gives greatest gain and hence the highest S meter reading.

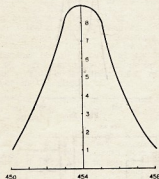


Fig. 1.

Now start with the sig. gen. above (or below) the passband, and record the frequencies which correspond to S meter readings of S1 to S9 progressively on both sides of the passband. Make sure you can repeat readings with reasonable accuracy before wasting time making plots!

After any adjustment in the i.f. stages likely to affect response, simply re-locate the frequency which gives maximum response, set the S meter to S9 with the sig. gen. attenuator, and re-run the curve. This series took 1½ inches of ball point pen!

CRYSTAL FILTER

The curve of Fig. 2a is typical of a simple crystal filter represented by the circuit of Fig. 2b. It was ideal in the pre-sideband era, particularly for c.w. reception. The curve (Fig. 2a) represents the second last selectivity position of the Super Pro. The last

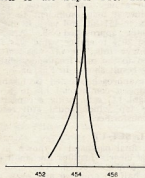


Fig. 2a.

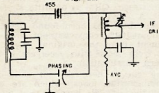


Fig. 2b.

position produces a curve which is just twice as sharp as this one! Coupled with an adjustable "notch" which can be used to "phase-out" heterodyne or c.w. QRM, it still finds favour, but not with sidebanders.

You can see that reception of upper sideband will be impeded and that although adjacent channel interference will be minimised, the response curve does nothing to help resolve intelligence from random signals in a 300 c.p.s. to 3 kc. spectrum.

Once the truth of this sinks in, it is not quite so hard to get to work with the side-cutters!

An enormous improvement in selectivity and slope factor results from adding an extra crystal, and using the simple lattice-type filter circuit shown in Fig. 3b.

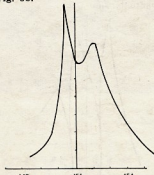


Fig. 3a.

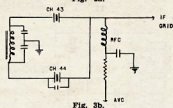


Fig. 3b.

SIMPLE LATTICE FILTER

Any xtal spacing can be used, but the commercial channel spacing of 1.8 kc. is ideal and suitable crystals are available for a song. Even importing them from U.K. at 4/6 each won't break the bank, who will supply the appropriate draft on request. No licence is required for such an import, and the address of several suppliers can be found in "Wireless World".

You can estimate the frequencies and channel numbers from the graphs. For those with 455 kc. i.f.s. the nearest channel is 46, which can be coupled with 45 or 47 as desired. If you are keen enough, a few rubs with carborundum will shift any i.f. crystal high by 1.8 kc., and you are in business without having to wait for the FT241A series. The i.f.s. would be aligned

* R.A.A.F., Glenbrook, N.S.W.

carefully to the mid-frequency between the crystals.

Our first response curve was a disappointment, looking nothing much like the nice theoretical curves in the handbooks. However, as this was an experimental project, trial and error methods soon showed that the loss of amplitude on the high frequency crystal peak was due to too much capacitance across the h.f. crystal. This was the result of including the original filter phasing capacitor with which we had hoped to alter the shape of the skirt, less drastically than Fig. 1 however!

Too much C across the I.f. crystal will also widen the skirt, but it also has the undesirable effect of increasing the dip in response between crystal peaks.

The excessive rise in response outside the crystal frequencies was thought to be due to the non resonant, and hence low Q, nature of the r.f. choke used as a load. A tuned load (Fig. 4b) was substituted, from the original filter, which had the grid tapped down the coil for better matching. This is not necessary, and results with the grid connected to the top of the load were substantially similar.

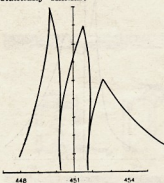


Fig. 4a.

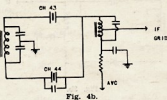


Fig. 4b.

The graph of Fig. 4a is intended to show the dual effects of improper alignment and frequency drift. You can see that the filter load is peaked 3 kc. off the desired frequency, and that the effect of too much stray C is still present.

The sag in the top of the response curve is, according to the book, best overcome by attention to the LC ratio of the secondary of the input transformer. But this was almost an impossibility with the Pro. In fact, at this stage I nearly abandoned the project to revert to the tried and trusted Q5-er arrangement. Fortunately, my inquisitiveness prevailed and a read through the appropriate sections of the A.R.R.L. and "CQ" Sideband Handbooks restored confidence by providing some clues as to possible courses of action.

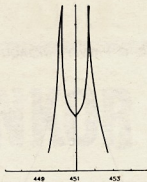


Fig. 5a.

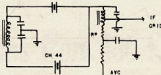


Fig. 5b.

A determined effort was made to reduce capacitance loading of the crystals. Unfortunately, this involved deletion of the old phasing capacitor and hence loss of variable selectivity. However, the sides of the passband steepened significantly and raised morale considerably.

A further brain wave suggested that the Q of the load might be significant in shaping the response in the centre of the curve, which should be nearly flat with not more than about 5 db. of sag.

Resistor R (a 100 ohm carbon) was added, as shown in Fig. 5b, to test the hunch.

Only 10 minutes work was needed after taking the first curve, to establish the resistance value which best filled the dip at 451 kc. There was no need to run a new curve for each change of value, it being sufficient to set the Bendix to 451 kc. and vary R until the S meter approached S9. After the nearest 20% tolerance value was found to achieve this, the i.f. was carefully aligned to the mid frequency, with the happy result shown in Fig. 5a.

This approach seemed preferable to wrecking a commercial i.f. to provide the right LC ratio using a capacitive centre tap which could still resonate the transformer.

FINAL SET-UP

The final passband is shown in Fig. 6a, and clearly justifies the small effort and expense involved. The band now seems half as crowded and even when conditions are wide open, adjacent channel s.s.b. QRM is of little significance. A move of 2 kc. away from a "round-table" has been found sufficient to allow 100% copy without arousing comment from the original group, at least from those with receivers in the modern classification.

The curves here do not show the inevitable side lobes, which are well below the -55 db. baseline, but which become significant where conditions

permit very strong signals, or if one lives close to another Amateur who uses the same band.

Theoretically these lobes are reduced by trimming the I.f. crystal with $\frac{1}{2}$ -2 pF., but after my experience with the effects of stray C, I decided to use the brute force method offered by notches from crystals paralleled across the filter 1.8 and 3.6 kc. on each side of the passband (Fig. 6b). These should take care of the strong locals, or those 50 db. over S9 stations that one hears about when the "pipeline" is open. No significant difference will be seen in the response curve above -50 db. if these crystals are omitted.

The books recommend two stages of lattice filters rather than one, but personally, after experience with this simple arrangement, I feel that this is not yet necessary in VK.

Incidentally, this filter does not reduce the available stage gain, and in fact care may have to be taken that the I.f. strip does not regenerate! If it does, apply the normal cures, bypassing to cathode rather than ground, and adding grid stoppers to the touchy stages.

Naturally, with such a passband, you won't want to be bothered with drift, so while the receiver is out of its case, some attention to stabilisation of the local and beat oscillator h.t. at the lowest possible voltage would be desirable. Increased bandwidth is often easy to obtain and well worth the trouble. My old Super Pro, with its converter, now has three dial divisions per kc. on 20 metres, and if one is so inclined, s.s.b. DX can be tuned-in with the big toe (Summer only).

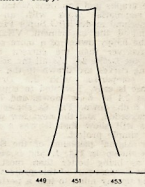


Fig. 6a.

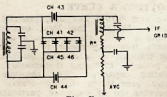


Fig. 6b.

Crystal filters only seem complicated and mysterious. A few experiments such as this series, soon cuts them down to size. A week-end's work on a project like this will do wonders for morale and quickly remove one cause of unnecessary frustration to yourself and others. Why not have a go? ●

HOW IMPORTANT IS THE S.W.R.?

BY "WUN GEE KEW"

It is, I suppose, a good thing that Amateurs tend to be perfectionists. It is because they are, that the best Amateur stations contain Ham-designed and built equipment which can compare with the best and most expensive professional equipment.

There are, however, many things in which this expertise can be taken too far, and one of them is to my mind in the constant striving after feeder line standing wave ratios as near unity as possible.

One well-known VK, for instance, spent many hours of hard work during which he sustained a bad fall from the top of his lattice tower, in an attempt to improve upon a standing wave ratio of 1.15!

As we shall see from the following mathematics (quite elementary ones, by the way), he might have saved himself the effort, as the gain he achieved by getting the s.w.r. down to unity from his already excellent figure was infinitesimal!

As most Hams know, the s.w.r. of a transmission line terminated by a pure resistance (which most antennae are at their resonant frequency) is calculated from the following formula:

$$\text{S.W.R.} = Z_r \div Z_0$$

or its reciprocal

$$Z_0 \div Z_r$$

where Z_r is the load impedance of the aerial and Z_0 the characteristic impedance of the feeder line.

If this ratio is anything else than unity, it means that all the energy sent down the line is not being absorbed by the antenna, and that some of it is being reflected back to the transmitter.

Having found out the s.w.r. on the feeder, it is easy to obtain the coefficient of reflection and from that the percentage of the total current that is being wastefully reflected back to the transmitter.

To obtain the coefficient of reflection of an antenna/feeder combination, we use the following formula:

$$\text{Coefficient of reflection (K)} = (\text{S.W.R.} - 1) \div (\text{S.W.R.} + 1)$$

and to turn this into a percentage of the current that is being reflected, we need only multiply K by 100.

Let's take a fairly common example—that of a 75 ohm antenna being fed with 52 ohm co-axial. The s.w.r. will be $75 \div 52$, or 1.44 approximately. Putting this figure into the second equation we obtain a K of 0.184. 18.4% of the current delivered to the antenna will be reflected unused by it.

At this point the purists say, "What did we tell you? Nearly 20% loss, and you are trying to tell us it doesn't matter!"

What they are forgetting is that nearly 20% of the current is being reflected, which is not at all the same thing as 20% of the power. The relationship $W = I^2 R$ tells us that power is proportional not to the current, but to the square of the current; and this puts a very different complexion on the matter.

In the case we have taken as an example, let's assume that 1 ampere of r.f. was being delivered to the 52 ohm line by the transmitter. 18.4% of it, or 0.184 ampere, is being reflected. By using the $W = I^2 R$ formula we find this represents $(0.184)^2 \times 52$, or 1.76 watts lost out of a total of 12×52 , or 52 watts actually "going up the spout". This is less than 3.5% of the power in the circuit.

In decibel notation, therefore, the loss with this arrangement is 10 log $52 \div 50.24$, or 0.15 db.

While I would like to see a bit better s.w.r. than 1.44, the fact remains that it results in an insignificant power loss. Taking it back into terms of percentage, no engineer would seriously suggest that a machine of 96.6% efficiency was exactly a failure!

Working through the same calculations for our VK friend and his s.w.r. of 1.15, we find that his antenna and feeder had a power transfer efficiency of 99.5%, from which it is immediately apparent that his praiseworthy attempt to reduce it to unity, while being a fine effort from a perfectionist point of view, was certainly not worth risking a broken neck for!

For ease of reference when you have found the s.w.r. on your feeder, the following table will give you the power loss in percentage and also in terms of dbs.

S.W.R.	Percentage Power Loss	Decibel Power Loss
1 : 1	0	0
1.25 : 1	1.2	0.02
1.5 : 1	4	0.18
1.75 : 1	7.5	0.3
2 : 1	11	0.5
2.5 : 1	18.5	0.9
3 : 1	25	1.3
4 : 1	36	1.9

From this it appears that if your s.w.r. is better than 2 : 1 you have little to worry about! Naturally, the actual losses will be a little higher than those listed, as ohmic losses additional to those purely due to loss by reflection must be taken into account; but with feeders of average quality it is unlikely that the figures realised will be inferior to those shown in the table by more than 5% or so.



Many Australian Amateurs have QSO'd Mickey YV5AIP, who is seen here at the operating desk with his equipment.

BRIGHT STAR CRYSTALS

FOR ACCURACY, STABILITY, ACTIVITY AND OUTPUT



Our Crystals cover all types and frequencies in common use and include overtone, plated and vacuum mounted. Holders include the following: DC11, FT243, HC-6U, CRA, B7G, Octal, HC-18U.

THE FOLLOWING FISHING-BOAT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS:—

6280, 4095, 4535, 2760, 2524 Kc.

5500 Kc. T.V. Sweep Generator Crystals, £3/12/6.

100 Kc. and 1000 Kc. Frequency Standard, £8/10/0 plus 12½% Sales Tax.

Immediate delivery on all above types.

AUDIO AND ULTRASONIC CRYSTALS—Prices on application.

455 Kc. Filter Crystals, vacuum mounted, £6/10/0 each plus 12½% Sales Tax.

ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.02% £3/12/6, 0.01% £3/15/6. plus 12½% Sales Tax.

Amateur—from £3 each, plus 12½% Sales Tax.

Regrinds £1/10/-.

CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you.

New Zealand Representatives: Messrs. Carrel & Carrel, Box 2102, Auckland.

Contractors to Federal and State Government Departments.

BRIGHT STAR RADIO

46 Eastgate Street, Oakleigh, S.E.12, Vic.

Phone: 57-6387

With the co-operation of our overseas associates our crystal manufacturing methods are the latest.





MR. T.V. SERVICEMAN!

PROTECT YOURSELF

WITH

TELECOMPONENTS PARTS

- ★ PROTECT YOUR MARGIN.—Telecomponents' products are more keenly priced to the Trade.
- ★ PROTECT YOUR GOOD NAME.—Telecomponents' coils and transformers are impregnated under vacuum with specially compounded tropic proofing varnish.
- ★ PROTECT YOUR CUSTOMER.—Telecomponents' parts are fully guaranteed.
- ★ PROTECT YOUR SERVICE CONTRACT RETURN RATIO.—Only Telecomponents offer replacement windings for E.H.T.'s. and Frame Output Transformers. Why replace the whole unit?
- ★ PROTECT YOUR INVENTORY.—Why carry stocks of components for all makes and models? Telecomponents' universal types have been developed to suit a variety of receivers without loss of performance.

AVAILABLE FROM THESE WHOLESALEERS:

FERRIS BROS. PTY. LTD.: SYDNEY 35-4356, MELBOURNE 42-3141, BRISBANE 56-4002, NEWCASTLE 61-5071, WOLLONGONG 2-1922; Edmunds Bros. Pty. Ltd., Melbourne 32-3971. PERTH: Tedco Pty. Limited, 28-3225. TASMANIA: W. & G. Genders Pty. Ltd.: Launceston 2-2231, Hobart 2-7201, Devonport 2-1921, Burnie 830.

TELECOMPONENTS

752 PITWATER ROAD, BROOKVALE, N.S.W.

Tel. 93-0221

A UNIT OF THE FERRIS GROUP OF COMPANIES

TRANSISTOR RADIOS*

AN INTRODUCTORY SERIES—PART ONE

PRELIMINARY SURVEY

In order to set the scene for this series of articles, it will be useful to recall first of all, that the transistor radio now covers a wide range of types, from highly miniaturised portables, some with short wave bands, battery operated cordless mantle receivers for home use, car radio receivers, and soon, transistorised television sets.

VARIETIES OF DESIGN

One of the most obvious trends in the design of transistor radios has been towards the production of smaller and smaller receivers, thus increasing the difficulty of access to components. Fault finding becomes more difficult and improved servicing techniques must be employed.

Fortunately many receivers (e.g. cordless home receivers) are considerably larger and the technician may obtain experience on this type of receiver prior to dealing with the problems of miniaturisation. The larger receiver may be expected to provide an output of 1w. or so and calls for the use of a battery of greater capacity.

The quality of reproduction is improved by a larger loudspeaker (e.g. 8" x 5") and cabinet. Such receivers have all the advantages of the transportable and, due to the absence of mains leads, are cordless. They have a particular advantage, of course, for areas having no mains supply, because of the low battery consumption.

Some currently available models may have a socket which allows a car-radio aerial to be used instead of the internal ferrite aerial. In this way the performance of the receiver when used in the family car can be improved, thus increasing the general-purpose appeal of the set. A further development of the same idea has led to models which, when in normal use, appear to be a car-radio operating from the car battery; when withdrawn from the fittings this receiver becomes fully portable, and operates from its own internal battery.

THE TRANSISTOR

In the most general terms, it can be said that the radio receiver requires amplifying and detecting devices which will operate at various frequencies. The circuit designer nowadays thinks in terms of two completely different types of device for providing amplification. Some general considerations remain the same, or almost the same, whether he intends to use thermionic valves or transistors. But in many respects the two approaches are completely different, and it is instructive to notice how often, if one can consider the valves in one way, it may be necessary to adopt an opposite viewpoint for the transistor.

One combination of characteristics—that of the valve—are thus being exchanged for a different combination—that of the transistor. The approach

● The present article is the first of a series on transistor portable receivers and cordless radios and particular attention will be given to the problems of servicing these devices. The treatment will be as simple and straightforward as possible in order that maximum benefit may be derived by those who are required to maintain transistorised radio equipment.

required for the transistor will be described in future articles as will its advantages and the way in which it should be handled. The ultimate aim is that those new to transistor techniques shall feel equally at home with transistors or valves.

PRINTED WIRING

Future articles will be devoted entirely to the question of printed wiring with particular reference to transistor receivers. The introduction of printed wiring at roughly the same time as the transistor has led to the production of highly compact personal portables. As many technicians will have had neither the time nor the opportunity to find out for themselves the best ways of repairing faults in this kind of wiring, the aim will be to pass on some of the techniques of those who have worked extensively on printed panels.

One point in favour of printed wiring is that, as all the connections are made in one plane, it is moderately easy to represent these connections diagrammatically in the service manual or service sheet. The maximum use should be made of this information when it is available.

THE CIRCUIT DIAGRAM

Fault finding will be less difficult for technicians having a good general knowledge of basic transistor circuitry and in the articles to follow this will be emphasised.

FAULT FINDING

Fault-finding procedures will be described in later articles in the series.

The majority of set failures will result in complete break-down. These are the easiest to service because the fault can be traced to an open circuit or a short circuit. Intermittent faults present more difficulty, as do sets subject to low output or excessive distortion.

BATTERY REPLACEMENT

Of the transistor receivers brought in for service, the great majority will only need a battery replacement. This does not, strictly speaking, count as servicing, though checking the state of the batteries is an essential preliminary to starting any job which has been brought in for repair.

Whilst locally produced transistor receivers are designed specifically to use local standard type dry batteries and the dry battery manufacturers are producing the more common type used in imported receivers, some imported receivers will still not accommodate local batteries and the serviceman is confronted with a physical problem of endeavouring to accommodate the largest capacity battery as is practicable.

A rundown battery may be the cause of a variety of complaints of poor performance. To safeguard against this occurrence, the set should be allowed to operate for some time before checking the battery voltage. This simple precaution will soon weed out those cells which have been able to recover sufficiently to give a respectable reading when first switching on.

Although usually the rate of deterioration of each cell is consistent where individual dry cells are used and it is sensible to replace all cells.

Set design policies on types of dry battery, measurement and anticipated battery life relative to receiver performance will be discussed in Part Two.

(To be continued)



F.C.C. Announces Amended Results— VK3ARZ WINS THE ROSS HULL V.H.F. CONTEST

The F.C.C. advises that it has reviewed the results of the Ross Hull V.h.f. Contest announced in the June issue of "Amateur Radio" following a re-interpretation of the Rule dealing with the claiming of bonus points in Section B.

The revised results place VK3ARZ as winner of the Ross Hull Trophy in place of VK5GG, who, however, retains the award for the VK5 Division in Section B with 465 points.

A gremlin in the tabulation of the results caused VK5ZDI to be placed in Section A instead of Section B, where he would not gain an award.

The revised score shows that VK4ZBZ is the winner for Section B with 657 points.

F.C.C. regrets the need for revision and hopes no one will be embarrassed by the amendment.



VK-ZL CONTEST

PHONE: 30th SEPT. and 1st OCT.

C.W.: 7th OCT. and 8th OCT.

1000 hrs. GMT to 1000 hrs. GMT

* Reprinted from "Mullard Outlook" (Aust. edition), Vol. 4, No. 1, 1961.

TWO-WAY RADIO OFFICIALLY HANDED OVER TO BURNIE FIRE BRIGADE

The Burnie Fire Brigade was officially presented with a two-way radio installation by the President (Mr. Max Ives, VK7MX) of the North Western Zone of the Tasmanian Division of the W.I.A. recently. The presentation took place at the Brigade's headquarters.

Mr. Harold Tattersall, Acting Chairman of the Brigade Board, introduced the speakers.

Cr. L. R. Rigney, who deputised for the Warden, spoke of the interest the Council had in the Brigade. He apologised for the absence of the Warden (Cr. W. T. Young).

Mr. Tattersall then introduced Mr. Ives, who outlined the composition and activities of the Wireless Institute of Australia. He said it consisted of Radio Amateurs and Associate members interested in radio.

The Amateurs built and equipped their own stations to experiment in the fields of radio and electronics.

REMEMBRANCE DAY CONTEST

12th and 13th AUGUST, 1961

1800 hours to 1759 hours E.A.S.T.

"Many valuable discoveries have been made by Radio Amateurs from time to time, and they do valuable work in the provision of communications in times of emergency, such as bush fires and floods," he said.

In officially handing over the radio apparatus to the Brigade, Mr. Ives said he hoped it would give long and faithful service.



The official handing over recently of a two-way radio installation to the Burnie Fire Brigade. From left: Mr. Max Ives, VK7MX (President of the North West Zone of the W.I.A. who handed the installation over), Mr. Reg Beach (Chief Officer of the Brigade), and Mr. H. Tattersall (Acting Chairman of the Burnie Fire Brigade Board).

(Photograph by courtesy of "The Advocate.")



AUSTRALIA'S OWN BRAND

Top right:

AEGIS STEREO SIX-88 AMPLIFIER

Full 16 watts of power. Choice of three inputs: Stereo, Monaural, and Radio Tuner. Designed for 240 volts, 50 cycles mains. All front controls.

Bottom right:

AEGIS IMPROVED Mark 2 TUNER

Power supply can be drawn from existing Amplifier through voltage dropping adaptor supplied. Alternatively, an outboard power supply (Aegis type PS/2) can be fitted directly to tuner.



AEGIS Products... are backed by continuous research and rigid production control. That is why AEGIS Australian-made components have long been recognised by Amateur and Servicemen alike as equal to the world's best.

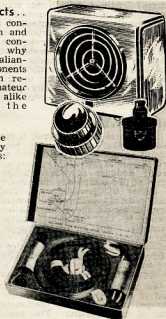
Look for these
AEGIS Quality
Tested Products:

Top right:
Extension
Speakers

Centre:
Two-Piece
Concentric
Knobs

Extreme right:
Radio Mains
Filter

Bottom right:
Aerial Filter
System



AEGIS MANUFACTURING CO. PTY. LTD. 208 LIT. LONSDALE ST., MELBOURNE FB 3731

VK-ZL DX CONTEST, 1961

N.Z.A.R.T. and W.I.A., the National Amateur Associations in New Zealand and Australia, invite world-wide participation in this year's VK-ZL DX Contest.

Objects: For the world to contact VK and ZL stations and vice versa.

When: Phone—24 hours from 1000 G.M.T., Saturday, 30th September, to 1000 hours G.M.T., Sunday, 1st October.

C.w.: 24 hours from 1000 G.M.T., Saturday, 7th October, to 1000 hours G.M.T., Sunday, 8th October.

Duration: For all contestants is 24 hours.

RULES

1. There shall be three main sections to the Contest—

(a) Transmitting phone.

(b) Transmitting c.w.

(c) Receiving—phone and c.w.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile marine or other non land-based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used, but no cross band operating is permitted.

4. C.w. will be used for the second week-end, and phone during the first week-end. Stations entering for both sections must submit separate logs.

5. Only one contact per band is permitted with any one station for contest purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor, and must submit a separate log under his own call sign.

7. Entrants must operate within the terms of their licences.

8. **Cyphers:** Before points can be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telemetry) or RST (c.w.) report plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then the second must be 054, followed by 055, 056, etc. If any contestant reaches 999, he will start again from 001.

9. Scoring:

(a) **Overseas Stations:** One point will be scored for each contact on a specified band with any VK or ZL district. The final score will be derived by multiplying the total contacts on all bands

by the total number of VK and ZL districts worked on all bands. These are ZL1, 2, 3, 4, 5; VK1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

(b) **VK and ZL Stations:** Five points for each contact on a specific band and in addition, for each new country worked on that band, **bonus points** on the following scale will be added—

1st contact—	40 points
2nd	" 30 "
3rd	" 30 "
4th	" 20 "
5th	" 10 "

For this purpose the A.R.R.L. countries list will be used with the exception that each call area in the U.S.A. will count as a scoring area.

10. Logs:

(A) **Overseas Stations—**

(a) Must show date, time in G.M.T., call sign contacted, band used, serial number sent, serial number received. **Underline** each new VK and ZL district when contacted and use **separate log for each band used.**

(b) Summary sheet to show: Call sign, name and address (please use BLOCK LETTERS), details of transmitter, etc., **total score** by showing total of districts worked on all bands and total contacts on all bands. (Districts multiplied by contacts equals total score.) Sign a declaration that all rules were observed.

(B) **VK and ZL Stations—**

(a) Must show date, time in G.M.T., call sign of station contacted, band used, serial number sent, serial number received, contact points, **bonus points.** Use a **separate log for each band.**

(b) Summary sheet to show call sign, name and address in BLOCK LETTERS and **score for each band** by adding contact and bonus points for that band and **total score** by adding scores together. Details of equipment used—transmitter, receiver, etc., and power.

11. Declaration to be attached to all logs: "I hereby certify that I have operated in accordance with the rules and spirit of the Contest."

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee, W.I.A., will be final.

14. **Awards:** (a) **VK-ZL Stations:** The W.I.A. will award certificates to the top scorer on each band and the top scorer in each VK and ZL district. Additional certificates may be awarded depending on the number of logs received.

(b) **Overseas Stations:** Certificate to the top scorer in each scoring area. Additional certificates may be awarded depending on the number of logs received, e.g. to high scorers on different bands and place winners.

15. Entries must be postmarked not later than one month after the close of the Contest, and addressed to **W.I.A., Federal Contest Committee, G.P.O. Box 851J, Hobart, Tasmania.**

RECEIVING SECTION

1. The rules are the same as for the transmitting section but it is open to all members of any S.W.I. Society in the world. No transmitting station is permitted to enter this section.

2. The Contest times and logging of stations on each band per week-end are as for the transmitting section.

3. To count for points, logs will take the same form as for the transmitting section but will omit the serial number received. Logs must show the call sign of the station heard (instead of worked), the number sent by it, and the call sign of the station being called. Scoring will be on the same basis as for transmitting stations. It is not sufficient to log a CQ.

4. VK receiving stations may log overseas stations and ZL stations, while ZL receiving stations may log overseas stations and VK stations.

5. Certificates will be awarded to the highest scorers on the same basis as for transmitting stations.

REMEMBRANCE DAY CONTEST

12th and 13th AUGUST, 1961

1800 hours to 1759 hours E.A.S.T.

FOURTH JAMBOREE-ON-THE-AIR

21st and 22nd OCT. '61

All Radio Amateurs with a past or present association with the Boy Scout Movement are invited to take part in this event. Hams in over 60 countries will be co-operating with Scout Groups and endeavouring to work as many other stations as possible.

Last year was the first time that Victoria made an organised effort, and the results were very satisfactory. A number of stations reported 45 Scout Groups, and 354 members of the Movement visited these stations. Well over 300 Group to Group contacts were made in all States of Australia and many overseas countries, by the Victorian stations. It is hoped that the interest shown will mean a greater participation this year.

The Victorian Branch of the Boy Scouts Association has again appointed VK3AGD, John Woodburn, of Dunkeld, as State Co-ordinator, and all Scout Groups are being circulated with all details and copy of log sheet to be used.

All interested Amateurs are asked to get in touch with the nearest Scout Group and offer their services.

Assistant Co-ordinators are to be appointed soon for the various Zones to help Amateurs who are willing to take part. So far VK3AUL (North Eastern Zone) and VK3ARL (Eastern Melbourne Suburbs) have accepted appointment. It is hoped to have a full list in Sept. "A.R."

Here is a golden opportunity for Amateurs to introduce our hobby to a great number of young people who are of a very impressionable age.

WANTED!

ARTICLES

Can you write an article for "Amateur Radio"? How about one for Hints and Kinks?

AMATEURS
FOR THE BEST RESULTS
USE

IRONCORE

- ★ POWER TRANSFORMERS AND CHOKES
- ★ BATTERY CHARGERS.
- ★ SCOPE AND ORYX IRON TRANSFORMERS.
- ★ STEPDOWN TRANSFORMERS.

IRONCORE TRANSFORMERS PTY. LTD.

HIGSON LANE, MELBOURNE, C.1

Phone: 63-4771

CHOOSE THE BEST—IT COSTS NO MORE



**Resin Core
SOLDERS**
for reliable connections

O. T. LEMPRIERE & CO. LIMITED
Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth

DURALUMIN, ALUMINIUM ALLOY TUBING

IDEAL FOR BEAM AERIALS AND T.V.

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS— $\frac{1}{4}$ " TO 3"

Price List on Request

STOCKISTS OF SHEETS—ALL SIZES AND GAUGES

GUNNERSSEN ALLEN METALS PTY. LTD.

88-92 YARRA BANK RD.,
STH. MELBOURNE, VIC.

Phone: 69-2121 (10 lines)
Telegrams: "Metals," Melb.



HANSON ROAD,
WINGFIELD, S.A.

Phone: 4-3362 (4 lines)
Telegrams: "Metals," Adel.

PREDICTION CHART, AUG. '61

Mc.	E. AUSTRALIA — W. EUROPE S.R.																Mc.
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
GMT																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — W. EUROPE L.R.																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — MEDITERRANEAN																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — N.W. U.S.A.																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — N.E. U.S.A. S.R.																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — N.E. U.S.A. L.R.																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — CENTRAL AMERICA																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — S. AFRICA																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
E. AUSTRALIA — FAR EAST																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
W. AUSTRALIA — W. EUROPE																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
W. AUSTRALIA — N.W. U.S.A.																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
W. AUSTRALIA — N.E. U.S.A.																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
W. AUSTRALIA — S. AFRICA																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	
W. AUSTRALIA — FAR EAST																	
0	2	4	6	8	10	12	14	16	18	20	22	24					45
45																	28
28																	21
21																	14
14																	7
7																	

It is again my pleasure to present the President's annual report on the activities of the Amateur Service and the work of the Wireless Institute of Australia over the past year.

At the Geneva Conference had concluded and Australian Amateurs had voiced their protests concerning sections of the Geneva Frequency Table which, if implemented, would have further restricted some of the bands allocated to the Amateur Service; bands which it was considered and already being reduced to an impracticable minimum in some parts of the spectrum, and were dangerously close to being obliterated in other parts.

In addition to the assistance rendered to the Institute by the Hon. Alan Fairhall, M.H.R. (VK2KB), Senator G. Hannan, Senator for Victoria, and the support of many other Ministers and Senators, it was made possible for our problem concerning the frequencies allocated for the use of the Amateur Service to be discussed and understood by the Government. It is history that the entire allocation of frequencies for the use of all Australian frequency users was looked at again, but this time by the Postmaster-General, Hon. C. W. Davidson, O.B.E., and called the Radio Frequency Allocation Review Committee. The composition of the Committee was the same as in previous times and in the pages of "Amateur Radio" magazine so I shall not reiterate the names again although I am sure the members they represented; but suffice it to say that a wide representation of Australian frequency users was represented, including a representative of the Wireless Institute of Australia, Mr. Arthur Tinkler, VK3ZV, representing the Amateur Service.

This Committee met twelve times, so from October 1959 to May 1960 during which time it carried out the Government's requirements to review the frequency allocations to Australian frequency users. The Wireless Institute of Australia Frequency Table, 1959, which was due for implementation during May 1961.

Under direction from the Postmaster-General, the discussions of the Wireless Institute Committee were not for general circulation until such time as he (Mr. Davidson) released the information. I was therefore unable (although I would have much preferred to do so) to report to W.I.A. Councils and members general matters dealt with by the Committee of direct concern to the Amateur Service. However, my representative was able to report to the Federal Executive so that the Institute was kept abreast of proceedings as the meetings of the Committee progressed.

Even as I write these words I am unable to detail the final work of the Committee, but I can say that its final meeting has now concluded, and its final report is in the process of being completed for submission to the Postmaster-General who will present it to the Government for its decision.

On the subject of the work of my colleagues within the Federal Executive have been presented to them, I can assure all Australian Amateurs that some real work has been achieved by the Committee. The Wireless Institute Committee and further, that I am satisfied the Amateur Service has had a just hearing of its problems along with those of other services.

The Postmaster-General's Department will ultimately advise the Executive concerning the release of that part of the Committee's recommendations which the Government has agreed with the Amateur Service frequency allocations. From my intimate knowledge of the work of the Committee in this regard, and having seen many of the immense problems currently encountered in engineering the use of the frequency spectrum so that all users can be satisfied, I have no doubt in my mind that the Amateur Service has received a fair deal.

Of course it has been said before, and it will be said again, that the problem of justifiable use of every part of the frequency spectrum is something that must periodically come up for review. Whilst the proposed Amateur Service Frequency Table, 1961, is in the air today, tomorrow some other service may, with every justification, claim more Kc/s. Mc/s., or even some other service may be saying it is necessary to change to other Services in other parts. If the Amateur Service is to maintain its allocations, then it must justify its use of the spectrum as being of relevance to all Australian Amateurs that the preservation of their domain has obtained because a handful of Amateurs saw fit to do something in defence of the bands. If you expect to keep them . . .

then use them! I can assure you that in the years ahead any part of the spectrum not being used by the Service allocated to it will be in dire peril.

In the course of this part of my report, I would like to pay tribute to Mr. Arthur Tinkler who gave so much of his valuable business and private time in order to carry out the duties of representing the Amateur Service through the Wireless Institute of Australia on the Radio Frequency Allocation Review Committee. He was one of the few members of the Committee that he was held in high regard, not only for the work for which he was detailed, but also for his valuable assistance to the discussions relating to non-Amateur sections of the spectrum.

I know that all Amateurs will join me in a hearty vote of thanks for the work Mr. Tinkler has done for the Amateur Service. Mr. Tinkler has also been appointed to the Federal Executive of the Wireless Institute of Australia where his services will be most welcome.

The Federal Executive met fourteen times officially during the past year, and copies of the minutes of each meeting went forward in due course. On which is duly elected by members to the normal routine correspondence. Because of necessity, not all the business transacted by Federal Council remained the same, members, and the work was done in the following paragraphs an overall resume of the year the W.I.A. does in keeping an organisation like ours running.

For those new and young members in our Institute I would like to just briefly outline our business structure. In your Division you have a Council which is duly elected by members each year and is empowered to carry out the duties of your Division in the manner you want them done. If you are like most, you know that you can improve on the method, then you have the machinery in your Divisional Constitution to do something about it. On the other hand, the problem of a particular problem is national in its nature, then your Council will table it before your Federal Executive for attention. The Federal Executive is the body which carries out the work of the Institute and carries out its directions in the same way as your Divisional Council carries out your directions. The Federal Executive has a representative from each Division of the Institute and he is known as your Federal Councillor. He is the liaison officer between your Divisional Council and the Federal Executive. Your problem, channelled the right way, reaches the Executive via your Federal Councillor. And so the work of the Federal Council proceeds to the year.

Because the Federal Executive must be in the one State to work efficiently, the policy of the Federal Council has been that it will be located in the Division in which the Central Administration of the Postmaster-General's Department is located. Hence the Victorian Division (known as the Headquarters Division) is responsible to appoint the members for office on the Federal Executive, all such appointments to be approved by the Federal Council. So that continuity of the working of the Federal Executive is maintained. It is the Federal Council policy that at least two-thirds of the previous Executive is appointed to the next year's Executive.

This is a brief outline, the more detailed information of which can be obtained from perusing a copy of your Divisional Constitution and the Federal Constitution, or access to a copy of the Federal Constitution.

And so for the past twelve months seven members of the Federal Executive, and several co-opted members, have been at work to provide the organisation behind Amateur Radio as you enjoy it. Many dozens more on Divisional Councils, and many more on the Federal Council to keep the W.I.A. in your State flourishing. These men I hold in the highest esteem, because without them many of the enjoyments of Amateur Radio would be lost.

Getting back to the work of the Executive and its co-opted members, I would like to pay tribute to those who worked so hard over the past twelve months to make the year of the Federal President to be a successful one. I say it that has been successful because a lot of work has been achieved, but the work is not always necessarily be observed by the general member. In a growing Institute there is a tremendous amount of routine work which has to be done, and it is the work of the Executive properly at Federal level. Without the co-operation and individual attention to the allotted tasks by the members of my Executive this would not be possible.

Although all the officers appointed with me last year have done an excellent job, time does not permit of detailing each member's work. However, I would like to briefly mention the work of the members of the Federal Business Manager, Major W. T. S. (Bill) Mitchell, VK3UM. During the year he prepared the final draft of the Geneva Frequency Table, a valuable history of our defence of the Amateur Service frequency allocations from 1958 to 1961. Its documentary value will be immense to those of the future who carry on in the decades ahead. Major Mitchell has also maintained a supply of statistical information to the International Amateur Radio Union (I.A.R.U.) who has offered information on investigations regarding the ratio of Amateur licensees who are members of the W.I.A. to those who are not; has also re-written the Federal Constitution in draft form including the incorporation of the Federal Policy Book as proposed by-laws of the new Constitution; he has prepared Divisional Membership return form by which it is intended that accurate data concerning membership is maintained; he has sorted and filed in correct order and in due course, the minutes of the Executive of the International Telecommunications Union Conference held in Geneva in 1959—itsself a time consuming task; and he has prepared the rules of the Australian D.X.C.C. and V.H.F. C.C. Awards including the incorporation of Divisional comments. In addition, Major Mitchell has also been offered information on

Whist all this has been going on, the Federal Secretary has been dealing with the one hundred-and-one letters, memos, notices, etc. which are part and parcel of the day to day work of the Executive. This year the Executive was re-organised so that less work fell to the lot of the Secretary and more work was done by the Executive members. This has proved to be long overdue and is resulting in a gradual increase in the amount of work done and a drop-off in the delays in the processing of the work of the directives of the Federal Council. I cannot advise that the Executive has caught up with all the outstanding problems which accrued during the past year. The Executive was short of staff and the Federal Secretary was indisposed, but I can say that with the help of the Divisional Secretaries, the Executive should bring a great increase in the completion of Federal Council directives.

Already the Federal Project Manager has completed the design and printing of a new D.X.C.C. Certificate, a new Divisional membership certificate, Remembrance Day Contest Certificate, National Field Day Certificate, and V.H.F. Century Award Certificate. These will not all be done at the one time, but in order of priority.

In accordance with Federal Council's direction, the Federal Project Manager, Mr. VK3ABV, has had a die struck for smaller V.I.A. membership badges and these are now available to members through their Divisional Councils. Due to the limited quantity of reproduction of color in the badge was rather disappointing, but, nevertheless, it has received the approval of the members designated than our former rather large badge.

During the year I received an invitation to attend the Annual Dinner and Convention of the Hunter Branch of the New South Wales Division of the Federal Executive. I was happy to accept the invitation. I was most honoured to be present and meet the President, Mr. Lionel Swain, VK2CS, and his great team of officers, the Federal Executive of the Western Division, Mr. Bill Lewis, VK3YB, the then Federal Councillor of the N.S.W. Division, Mr. Gordon Sutherland, VK3ZV, and the Hon. M.H.R., VK2KB, who is a member of the Hunter Branch; the Hon. Secretary of the Hunter Branch, Gordon Sutherland, with the assistance of the hard working staff who are responsible for the organisation of the very happy week-end I was able to spend with them.

The invitation was also extended to me to be present at the Annual Dinner of the Geelong Amateur Radio Club and the VK3 State Council. I was unable to attend, but I regret that my matters claiming my attention at the time, I regretably was unable to attend.

Matters relating to the v.h.f. bands have at various intervals reached the Executive and have been dealt with by V.I.A. members, Mr. Dave Rankin, VK3QV, who also looks after mailing and distribution of the overseas international and V.H.F. sign books. These are distributed to Divisions four times

yearly and should be available to members who desire to check calls and addresses for DX purposes.

The Federal Treasurer was made responsible during the year for all property belonging to the Federal Executive and in this regard awards, certificates, stationery, etc., were transferred to his premises. This eases the task of costing and stocktaking at regular intervals and is a more workable system than the previous one. The Federal property was spread out between the homes of several members of the Executive. Access to the copy of minutes from Executive meetings was given to the Federal Councillor will indicate that the Federal Treasurer has kept excellent records and balance sheets of the Federal funds of the Institute for those interested. The audited balance sheet is appended to this report.

The Federal Contest Committee completed another fine year's work in circularising rules throughout Australia and overseas for respective contests held by the Wireless Institute of Australia. In particular the goodwill created overseas by the VK-ZL Contest is something always worth fostering and the liaison between the W.I.A. and the N.Z.A.R.T., who biennially are responsible for the running of the VK-ZL Contest, was of the highest order. Mr. Jensen, VK1JL, Chairman of the Federal Contest Committee, did an excellent job, maintaining regular copies of the minutes of the Committee's meetings to the Federal Secretary. Mr. Jensen has now found it necessary to retire from the post due to pressure of work and this position has been taken over by Mr. C. Spence, VK7KS. The Committee, until this change of office, was composed of VKs 7LJ, 7DW, 7KS, 7RY and 7JB. From experience I am well aware of the time consuming work which goes into the checking of contest logs and my thanks are extended to this Committee for a year's work well done.

During the year, also, there has been marked increase in single sideband transmissions (s.s.b.) by Australian Amateurs. S.s.b. has been firmly established overseas for some years and has become popular in VK amongst a relatively small group of earnest experimenters. Now as proven popularity as a means of communication, especially in these times of crowded frequency allocations and interference from commercial transmitters, I forecast a great future for this mode of transmission in this country. The country has consistently moved ahead into new fields as the science has progressed and it is quite paramount to me that the pattern is set for yet another era of interesting and valuable progress.

Coupled with this interest in the current application of s.s.b. is frequency shift keying (f.s.k.). Although only very few are desiring to experiment with this form of transmission (probably due to lack of equipment) at the present time, the matter has come before the Executive during the year. Divisions were asked to comment on the pros and cons of f.s.k., but the results were not really conclusive. In order that every opportunity be allowed for those interested to experiment without restriction, it was decided to agree with a test period on all Amateur bands during which time any problems arising could be analysed. In this regard the Postmaster-General's Department has agreed to the introduction of f.s.k. on all licensed Amateur bands for a trial period until July next, after which the matter will be reviewed in the light of the experience gained.

There seemed to be some doubt in the minds of a few members of the Federal Council as to the desirability of this type of transmission in our already crowded bands, but since the frequency shift is limited to 820 cycles there appears no reason why any interference should be occasioned than experienced by a.m., n.b.f.m., s.s.b. transmissions and so on. In all cases, irrespective of the type of transmission, it is required that the equipment be operated satisfactorily, and this being so, then f.s.k. only 820 cycles wide takes up less room than a.m. phase station. Anyway, it will be interesting to follow development in this field in the future months.

Official W.I.A. broadcasts continued transmissions throughout the year in each State of the Commonwealth, dissemination to the country and city members, and it is obvious that this is a service widely proclaimed, particularly by those who are unable to attend the regular monthly meetings of the Divisions. However, I would like to comment at this stage that a number of complaints have been heard about the W.I.A. broadcasts. The W.I.A. times set down for transmission, thereby causing interference, not only to other W.I.A. transmissions, but also to other Amateurs. In this regard I would like to see the frequency

and time schedule, as agreed to by the Federal Council and contained in the Federal Policy Book, carried out in its entirety.

For the past year the Federal QSL Bureau continued to function in its usual efficient manner. Federal QSL Officer, Mr. Ray Jones, VK3RJ, spent long service leave abroad with his wife, the Bureau being carried on by Mr. Eric Trebilcock, BERS-195, during Mr. Jones' absence.

43,524 cards were handled by the Bureau with 42,755 for the previous year, showing a small increase over the 1959 period and a substantial increase over the 1959 (41,882) period. The costs of handling QSL cards rose rather sharply for the reasons, (a) cost of postage to enable quick delivery from the Federal Bureau to the Headquarters Division which were previously delivered to a central pick-up point for re-delivery with an attendant delay; (b) the first year of increased postal rates was met; and (c) the increase in cards handled.

During his trip abroad, Mr. Jones visited the R.S.G.B. (U.K.), the U.S.K.A. (Switzerland), and the R.E.F. (France) where he was able to study QSL Bureau methods used by those societies. Mr. Jones reports that the system used by the Federal Bureau in Australia compares more than favourably with systems used overseas. He was cordially greeted wherever he met Amateurs on his travels and the warmest hospitality was extended to him and Mrs. Jones.

One matter on which I am happy to report is the activity by Divisional Councils during the year in respect to encouraging young people to take an interest in Amateur Radio as a hobby. Quite a number of exhibitions and field days were arranged at which we can always anticipate the presence of young interested people. The encouragement of interest in Amateur Radio is just as important as using the Amateur frequency allocations, because it is only by such encouragement that we shall

(Continued on Page 15)

WIRELESS INSTITUTE OF AUSTRALIA—FEDERAL EXECUTIVE

BALANCE SHEET AS AT 28th FEBRUARY, 1961

Current Liabilities:—		Current Assets:—	
Creditors	£49 9 1	Commonwealth Savings	
Constitution Fund	11 11 10	Bank	£956 0 10
Trust Fund	102 1 7	Debtors	4 10 0
I.T.U. Fund	454 10 8	Stock on hand	48 0 0
	£597 13 2		£1009 10 10
Accumulated Funds:—		Fixed Assets	
Balance, 1/3/60	£634 9 10	(at cost less depreciation:—)	
Excess of Income over Expenditure for year ended 28/2/61	54 13 8	Furniture and equipment	£15 9 10
	589 3 6	Typewriter (No. 1)	15 5 0
	£1286 16 6	Typewriter (No. 2)	24 5 0
		Duplicator	145 0 0
		Trophies	20 10 0
		Equipment—VK3WIA	53 10 0
			277 5 10
			£1286 16 6

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 28th FEBRUARY, 1961

EXPENDITURE		INCOME	
Depreciation	£14 16 0	Per Capita Payments	£288 10 0
Federal Contest Committee Expenses	40 13 6	Profit on Sale of Log Sheets and Badges	2 19 5
QSL Bureau Expenses	22 0 0	Insurance Claim	135 0 0
D.X.C.C. Expenses	33 8 0	Bank Interest	33 5 10
Postage and Telephone	30 11 4		
Printing and Stationery	74 3 0		
Insurance	1 10 0		
Licence—VK3WIA	15 11 3		
Cartage and Storage	20 10 3		
Leasehold (late J. Moyle)	25 11 3		
Certificate Banks	129 12 8		
Letter to All Hams	4 0 0		
Administration Chart	54 13 8		
Excess of Income over Expenditure	£459 15 3		£459 15 3

STATEMENT SHOWING MOVEMENTS OF FUNDS FOR YEAR ENDED 28th FEBRUARY, 1961

CONVENTION FUND—			
Balance in hand as at 28th February, 1961 (unchanged)			£11 11 10
TRUST FUND—			
Balance in hand as at 1st March, 1960		£70 5 5	£5 5 0
Add Transferred from Food for Britain Fund		26 11 4	
Sales of "Call Book Magazine"			98 16 7
Balance in hand as at 28th February, 1961			£102 1 7
INTERNATIONAL TELECOMMUNICATIONS UNION FUND—			
Balance in hand as at 1st March, 1960		£521 15 0	
Add Further Contributions from New South Wales	£17 12 7		
Further Contributions from South Aus.	1 0 0		
Refund of Unspent Geneva Expenses	93 5 0		
		111 17 7	£633 12 7
Less Lunch for Delegates to Easter 1960 Emergency Meeting of Federal Council		£8 10 0	
Expenses of Divisional Delegates to that Meeting		165 4 0	
Printing, etc., in connection with that Meeting and the Geneva Conference		27 7 11	
Balance in hand as at 28th February, 1961			199 1 11
			£434 10 8

We have examined the books and vouchers of the Wireless Institute of Australia (Federal Executive) for the year ended 28th February, 1961. In our opinion the above Balance Sheet is properly drawn up so as to show a true and fair view of the state of the affairs of the Federal Executive as at 28th February, 1961, and that the attached Income and Expenditure Account is properly drawn up so as to show a true and fair view of the results for the year ended on that date. Stock on hand at 28th February, 1961, has been accepted on the Certificate of the Treasurer, DAVID FELL & CO., Chartered Accountants, Melbourne, 10th May, 1961.

WARBURTON FRANKI

Australia's Biggest Range and Best Values in Radio Parts



KEW MULTIMETER TK0B

Sensitivity: D.C. 20,000 ohms volt.
A.C. 2,000 ohms volt.
Volts: A.C./D.C. 0-10, 0-50, 0-250, 0-500, 0-1,000.
Milliamps: D.C.: 0-500 μ A., 0-10 mA., 0-250 mA.
Resistance: 0-20K ohms, 0-200K ohms, 0-2 megohm.
DB. (up to 6,000 cycles) to 22 DB.
Capacitance: 0.001 to 0.2 μ F. Size: $5\frac{1}{4}$ " x $3\frac{1}{4}$ " x 1 1/2".
PRICE £17/12/0 plus 12 1/2% Sales Tax.

SUPPLIED COMPLETE WITH
INSTRUCTION SHEET
AND TEST LEADS

Scope

Low Voltage Soldering Iron. Safe and convenient to use. Iron only, £2/5/0; pack and post 5/-. Transformer to suit, £2/4/8; pack and post 5/-. Will also work from car battery. A complete range of spares always in stock.

Pronto Soldering Gun

Price £2/5/0. Transformer to suit, £2/4/8. Pack and post 5/-. Automatic Solder Feed Attachment, 26/8; pack and post free.

Superior Soldering Irons—240v.

S4, 25 watts	30/7	
A1, 40 watts	28/-	Pack and
S1, 55 watts	36/-	Post 2/8.
A2, 80 watts	34/-	
A4, 80 watts	42/-	

Solder

36" lengths, Resin Cored Ersa, 1/- each. Pack and post free.
1 lb. Reels 40/80 12/3 each Pack and
1 lb. Reels 80/40 14/8 each Post 1/3.

Diamond Stylus Standard 78

No. 7, 8, 14, 16, 17 and 24, 15/- each plus 25% Sales Tax. Pack and post free.

Meters—4 ins. Square

0-1 mA. Plain Scale	75/- each	Pack
0-1 mA. Multimeter Scale	75/- each	and
0-500 μ A. Plain Scale	79/8 each	Post
0-50 μ A. Plain Scale	87/6 each	2/6 ea.

Power Diodes

Similar to OA210, 1N1763, etc. Type HR25, 12/8 each. Pack and post free.

1H6G 2 Volt Diode-Triodes

2/11 each. Pack and post 7d.

Frame Output Transformers

Suit 6BM8 valves, 29/11. Pack and post 2/1.

CLEARANCE—ENGLISH STEREO FOUR-SPEED RECORD CHANGERS—£12'15/- + 25% S.T. Freight forward

Imported Four-Speed Turntables and Separate Pick-up
Latest Turnover type. Crystal Cartridge, £4/6/3 plus 25% Sales Tax.
Pack and post 3/6.

TORCH LAMPS

American, 2.5 volt 1/4 amp. M.E.S. Base. Boxes of 10, 2/11. Pack and post 7d.

SPECIAL—POWER TRANSFORMERS

50 mA., 225-0-225v., 6.3v. at 2a., 31/8 plus 25% Sales Tax. Pack and post 2/9.
30 mA., 150-0-150v., 6.3v. at 1.7a., 26/4 plus 25% Sales Tax. Pack and post 2/3.

STEP-DOWN TRANSFORMERS

240/24v. at 1/4 amp., 26/8 plus 25% S.T. 240/12v. at 1.5 amp., 26/8 plus 25% S.T.
240/6.3v. at 3 amp., 20/- plus 25% S.T. Pack and post, any of the above, 2/-.

W.F. ARE VICTORIAN DISTRIBUTORS FOR MAGNAVOX SPEAKERS

Write or Call for Data Sheet describing these Low Priced Top Quality Products

12WR Dual Cone, 10 watts, 30-15 kcs., V/C Impedance 15 ohms, 97/9 plus 25% S.T.
8WR Dual Cone, 7 watts, 30-15 kcs., V/C Impedance 15 ohms, 91/3 plus 25% S.T.
12PIX Dual Cone, 10 watts, 30-12 kcs., V/C Impedance 2.7 ohms, 76/6 plus 25% S.T.
8PIX Dual Cone, 7 watts, 30-12 kcs., V/C Impedance 2.7 ohms, 58/6 plus 25% S.T.
Pack and post 5/- each.

TELEVISION ANTENNA SPECIALS

Indoor Spiral Type Aerials. Ideal for good reception areas, 31/- plus 25% S.T. Pack and post 2/-.

Four Element Outdoor Aerials, suitable primary areas. Type AM1, 38/- plus 25% S.T. Freight forward.

Chimney Bracket Sets, comprising galv. steel bracket, 12 ft. stainless steel strap, U bolts and J bolts, 19/- plus 10% S.T. Pack and post 2/8.

6 ft. x 1 in. Galv. Steel Mast, 18/- . Pack and post 2/6.

Stand-Off Insulators

12 inch Metal Thread or Wood Screw, 8/- dozen plus 25% Sales Tax.

Turnbuckles 4 inch extending to 8 inch, 3/6 each plus 12 1/2% Sales Tax.

Maststraps 5/3 dozen plus 25% Sales Tax.

Plugs and Sockets Surface type for 300 ohm Ribbon. Walnut only, 2/9 pair plus 25% Sales Tax.

300 ohm Ribbon 100 yard Reels, 45/- plus 12 1/2% Sales Tax.

Open Line Feeder Cable—300 ohms

Will improve reception in fringe areas where ordinary Ribbon is now being used, 45/- per 100 ft. plus 12 1/2% Sales Tax. Pack and post 2/6.

Open Line Insulators

to suit Metal Thread or Wood Thread, 1/- each plus 25% Sales Tax.

3 Element Travelling Wave Antennae

£8/15/- plus 25% Sales Tax. Freight forward.

Tenna Ties—Hi-Lo Band Connectors

2/- each plus 25% Sales Tax. May also be used as attenuators. Post free.

N.A.C. Telephone Sets

New Grey Plastic Hand-Sets with built-in Buzzers. Ideal for house to garage, shop to kitchen or inter-departmental communication, etc. Only extra required is Twin Flex for connection. Price per pair, £9/18/6 plus 12 1/2% S.T. Pack and post 3/6.

Test Leads

Rubber Covered, Heavy Duty Flex with high quality Tips and Prods, 11/9 pair plus 12 1/2% S.T. Pack and post 9d.

Stereo Crystal Pick-up Cartridges Imported Collo

With Two Sapphire Stylus, 29/8 plus 25% S.T. With One Diamond Long Playing Stereo and One Sapphire Standard Stylus, 26/7 plus 25% S.T.



WARBURTON FRANKI

359 LONSDALE ST., MELBOURNE — MU 8351



OPEN
SATURDAY
MORNINGS

☆ TRADE ALSO SUPPLIED

Please include Postage or Freight with all Orders

1961 EDITION

RADIO AMATEUR'S HANDBOOK

Published by AMERICAN RADIO RELAY LEAGUE

Price 46/3 Plus 2/- Postage

BIG . . . REVISED . . . COMPLETE

An invaluable reference work and text for everyone—Radio Amateurs,
Engineers, Lab. Men, Technicians, Experimenters, Students,
Purchasing Agents, etc.

KEEP PACE WITH PROGRESS!

ORDER YOUR COPY NOW!

McGILL'S AUTHORISED NEWSAGENCY

"Established a Century"

183-185 ELIZABETH STREET, MELBOURNE, C.1, VIC.

"The Post Office is opposite"

Phones: MY 1475-6-7

TYPE 65

General purpose with
low frequency response
suitable for lively halls.

TYPE 66

P.A. use where less low
frequencies are required
than the 65 with a lift in
the middle frequency to
ensure high output with-
out feedback.

TYPE 67

Communication use, has
a further reduction in
low frequencies than the
66 and increase in high
frequencies for intelli-
gibility through noise.

THREE INDIVIDUAL TYPES IN THE FAMILIAR "65" CASE

★
Available in Low (M.D.)
50 ohms, and High
(M.A.) Grid Impedance.



Retail Price including Sales Tax

Type	65 MA	.....	£11/0/7
"	65 MD	.....	£8/19/0
"	66 MA	.....	£11/3/6
"	66 MD	.....	£9/3/0
"	67 MA	.....	£11/3/6
"	67 MD	.....	£9/3/0

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VICTORIA

PHONES: BL 1300, BL 4556

VK6VF-A 50 Mc. BEACON TRANSMITTER

VHF NOTES

(Continued from Page 17)

Many 50 Mc. operators in Australasia and elsewhere have heard on 50.002 Mc. under favourable conditions, the automatic m.c.w. signal from the VK6VF transmitter located near Perth in Western Australia.

It is hoped that this description of the station may be of interest to these and others, and may encourage similar projects to be put into operation by interested parties.

The station is, of course, a team effort, constructed and operated by members of the V.h.f. Group of W.A. Inc.

AIMS

1. To ensure the presence of a signal on the 50-54 Mc. band as consistently as possible to partially compensate for the variable level of activity on that band and hence to reveal any propagation effects which might be missed due to the low activity level.

2. To provide a consistent signal to encourage local activity by aiding beam and receiver tests, etc.

EQUIPMENT

The transmitter consists of a 6AC7 modified Pierce oscillator/tripler from an 8.833 Mc. xtal. driving a TC5 doubler, which in turn drives a single 807 with some 25 watts input. The modulator is very simple—it contains a neon tube and a single 6V6. Screen modulation is employed, and this seems quite adequate for the purpose. As a point of interest, the centre tapped output transformer from a Comand receiver has been pressed into service as a modulation transformer with good results. 807 screen h.t. is applied to the tap; the 807 screen connected to one "end" and the 6V6 anode to the other. Nothing original of course, as a similar scheme has often been used to provide a cheap modulation transformer with p.p. speaker transformers in low power plate/screen modulators. Probably a step-up ratio would be superior for the screen only application, but needs must!

Tone modulation (A2) only is available; no provision has been made for A3 operation.

The neon tone oscillator is keyed direct at the earthy end of the neon tube by a code wheel driven, via a gearbox (ex a recording voltmeter), from a gramophone type induction motor (ex a discarded 78 r.p.m. turntable). The code wheel itself is a phosphor bronze disc 4 inches in diameter with the call letters around the circumference. Keying is effected by a wiping tungsten contact culled from an old pair of motor vehicle ignition points. These details are mentioned particularly because of early difficulties with exceedingly flimsy or less robust materials for the wheel and contact.

The antenna in use at present is a four element wide-spaced yagi, rotatable. The direction of transmission is variable, but mainly in a direction N.E. from Perth or other directions as circumstances dictate.

HOURS OF OPERATION

Naturally in a "beacon" project such as this, the greater number of hours "on air" the better. This end an initial application was to the P.M.G.'s Dept. for a 24-hour continuous permit. Unfortunately, due to the implication of unattended operation, this could not be granted. Therefore the station is run only when the operator is in attendance. This generally means the transmitter is on the air approximately 65 per cent. of possible time. This is an average taken over an eight-month period recently completed.

Typical operating hours (E.S.T.) are 0100-1800 four days a week; 0100-0800, 1800-2400 (one day a week); 0000-2400 (two days a week).

Unfortunately, due to the proviso afore mentioned, these hours do vary, but may serve as a guide. They should not be taken as actual hours. The beacon could be operating at any time as the present operator is a shift worker. Total hours run since September 1960 exceed 4,000 hours.

By the way, this transmitter has not heard of "winter slumps" in 50 Mc. activity!

RESULTS

Since the introduction of "The Beacon" (as it is referred to in VK6) in January 1960, DX reports have been received from JA, VK3, K8S, a Mobile Marine in the Pacific, and mainland VK districts.

In many cases these DX reports have been forwarded subsequently to the event as there has been no regular activity on the band at the time. Apart from Interstate and International results, Intrastate reports have been most gratifying. Reports have been received, particularly from Geraldton (280 miles), Moore (90) and Waroona (7 miles). In addition, the signal has often been employed for receiver alignment, antenna tests, etc., on purely a local plane.

REPORTS

It is proposed to continue running the transmitter on 50.002 Mc. while we continue to retain use of the band. To help justify this plan, ALL reports of reception will be most welcome and, if required, will be replied to by QSL card.

CONCLUSION

An interesting complementary project to this would, of course, be a remote continuously run recording receiver. Any takers?

Any correspondence on the subject would be welcomed and should be addressed to: The Secretary, V.h.f. Group of W.A. Inc., C/o VK6VF, 42 Purdum Road, Wembley Downs, Western Australia.

1 m.x most nights. He has 10w. of stabilised gear on 288.8 Mc. and also has a mod. osc. The sh. is a good one and grid controlled with 11 el. beam. Syd 3C3 at Nagambie is also running clocks with Frank and Peter 3APF at Shepparton is also on. 3ZAG has also been heard. Ron 3ZG in 20m is running from 20w. to 3/20 and a 7 el. yagi about 60 ft. high.

Over the border in VK5, David 5AW is now running about 80w. to a 6/40 and is looking for a sh. A recent copy of "Splatter" from the University of Adelaide Radio Club's mag we learn that 5UAT will soon be in a position to transmit t.v. signals. The various sh. and equipment are currently being constructed by members and no doubt enquiries from enthusiasts who would like to co-operate would be welcomed. Bill 5ZAX would possibly be a starter.

GENERAL

A large gathering at the June meeting in Sydney heard an instructive lecture by Arthur 2JM on "Safety in the Shack". Arthur pointed out the hazards with 240v. a.c. in the Ham shack and gave a recent copy of "Splatter" to organise the shack for safety and convenience, pointing out the necessity of correct fusing and to comply with the S.A.A. wiring rules. He made the point that the rules are intended to promote safety. We hope that he got his message across and that the haywire hook-ups will be banished.

The June meeting in Melbourne was held on Wednesday 21st. Despite the miserable evening a packed house gathered to hear the 52Z experts give various discourses on their gear. Ted 3AAD described his audio modifications, John 3ZCB spoke on his 6 m.x conversion, with Joek 3CB on 6 m.x and 1 m.x conversion. Allyn spoke about using an 82B which not work in 52Z, but had hardly finished when he was presented by one of the same by 3AAU. Allyn was last seen heading toward the back of the meeting. A new arrangement was tried for general business to overcome the time factor and this was a newsletter outlining proposals for field days and possible amendments to the Ross Hill rules. These were distributed with appropriate comments so that these will come up at the next meeting and the proposal for a new rule of 10m is going on. The meeting concluded with supper and a rag-chew.

Two outstanding qualifiers are still awaiting their certificates for the VK5 V.h.f. 100 Award. New certificates are being printed as soon as possible and further details will be posted as they are available.

In connection with the above, as well as any other award, does your card confirm that a two-way contact took place, the band of operation, date, time, signal report (RST), your usual signature? If it doesn't it might not count for any certificate or award. It is surprising how many cards omit the essential information. It should also show mode of transmission—phone, c.w., s.a.b., etc.

The last meeting of the West Australian V.h.f. Group took place at the end of May and had a very good roll up despite the inclement weather.

At the June meeting in VK1, a lecture committee—TEJ, TZAK and TZAO—was formed to help build interest in the meeting. They intend to concentrate on demonstrations, exhibitions and so forth, rather than formal lectures. One of these will be on rx alignment using test equipment not of ready access to all.

It now seems likely that the next Ross Hill Contest will be run on a mileage basis of some form. We're hoping for many more participants. Although VK1s don't seem to be vocal in the matter of rule changes, they have their say and their Group acts as unofficial advisers to the F.C.C. on matters of v.h.f. interest.

COMING EVENTS

The lecture for the Sept. meeting in VK2 will be on u.h.f. equipment. Melbourne v.h.f. slow morse transmissions on Friday evenings 8.30 p.m. Please remember that the notices are printed during the middle of the month and that coming events at the beginning of the month have passed by the time you receive them.

The list of DX accomplishments is growing very slowly so it may be a while before we print them. Thanks to 2ZDF, 3ZGF, 3ARZ, 1JW, 2ZGM, 8V5, 8SL, TZAO, TLD and others for their notes and comments.—3AAU.

REMEMBRANCE DAY CONTEST

12th and 13th AUGUST, 1961
1800 hours to 1759 hours E.A.S.T.

CHOOSE THE BEST—IT COSTS NO MORE

Resin Core SOLDERERS
for reliable connections

O. T. LEMPIERRE & CO. LIMITED
Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth

RESIN CORED GOLD PLATED WIRE
16
PHYSICAL EQUIPMENT
ANTICORROSION FREE
O. T. LEMPIERRE & CO. LIMITED

NOTES

FEDERAL

R.D. CONTEST, 1961

This year the Remembrance Day Contest will commence at 1800 hours E.A.S.T. on 12th August and conclude at 1759 hours E.A.S.T. on 13th August.

The Contest will be opened by a tape recorded address by the Governor of New South Wales, His Excellency Lieut-General Sir Eric Woodward, K.C.M.G., C.B.E., D.S.O.

All Australian Amateurs are asked to particularly keep off the air for a period of fifteen minutes before 1800 hours E.A.S.T. on 12th August whilst the official W.I.A. stations are transmitting the Governor's opening address.

At the conclusion of His Excellency's opening address there will be two minutes silence in memory of those who paid the supreme sacrifice.

GENTLEMEN'S AGREEMENT

On the bands allocated to the Amateur Service there has always been a "gentlemen's agreement" that portion of the frequency assignment would be set aside for c.w. operation and portion for phone operation. In this regard the lower end of each band has been agreed to for c.w. operation.

With the "lower" end minima approaching over the next few years, the conditions on the 3.5 and 7 Mc. bands are improving at a great rate. In the past the first 50 kc. has always been set aside by a "gentlemen's agreement" for the use of c.w. operators, a fact which seems to have been forgotten during more recent times. The W.I.A. would like to draw the attention of Amateurs to the fact that it is imperative that some form of discretion be agreed to in respect of c.w. and phone operation. If any operator nothing but intolerable interference can ensue.

50 kc. as agreed to in the past, has been a reasonable portion for c.w. This may have to be lowered and again in view of the relatively new and popular v.h.f. transmitters, but at least let us realise that it is better to have a c.w./phone dissection than to have more QRM than is caused by interference from over-casting and irrational c.w./phone Amateur transmissions.

Sunspot cycles DO change the operating habits of Amateur stations and in view of the conditions attracting operating in the 3.5 and 7 Mc. bands it is all the more worthy that Amateurs should arrange their own operating habits. We suggest leaving the first 50 kc. to the c.w. gang. With phone using the remaining 50 kc. of the exclusive 7.0 to 7.1 Mc. assignment. If any operator shared assignment is agreed to then phone can occupy this along with s.s.b.

POSTMASTER-GENERAL'S ADDRESS

The 1961 Convention of the Institution of Radio Engineers was opened by the Postmaster-General, the Honourable C. W. Davidson, O.B.E. His opening address, the Postmaster-General made reference to the Amateur Service in Australia, saying, "In addition, some 4,000 Amateurs make radio their hobby and enthusiasts are not only improving their knowledge of the radio art in their own time, but are promoting goodwill through their contact with other Amateur operators in various parts of the world, in addition, of course, to transmissions in times of emergency."

FEDERAL QSL BUREAU

Divisional QSL Managers please note the following changes in the A.R.R.L. QSL Bureau:

- KL7—Box 6225, Airport Annex Anchorage, Alaska.
 - KP4—Joseph Gonzalez, KP4YT, Box 1961, San Juan, Puerto Rico.
 - W2-K2—North Jersey DX Assn., Box 363, Bradley Beach, N.J., U.S.A.
- A change in the address of the s.w.l. cards for U.S.A. should be sent to Mr. Le Roy Waite, 39 Gannett St., Ballston Spa, N.Y., U.S.A.
- The N.R.R.L. seeks publicity for the Scandinavian Activity Contest which is to hold

as follows: C.w. 1500 GMT, Sept. 16, to 1800 GMT, Sept. 17, and Phone 1500 GMT, Sept. 23, to 1800 GMT, Sept. 24. Full details may be had from this Bureau.

Enclosed with a bundle of back-dated QSLs from the Israel Amateur Radio Club is an apology for the delay in forwarding. Several upward happenings contributed to the hold up.

Cards through the Federal Bureau during June totalled almost 5,000. This was the heaviest month since May 1958.

The most ambitious DX-pedition ever dreamed of is being undertaken by W4CZ and W4BFD. The former will be the main back home, and Gus the man doing the operating from overseas. He plans to get moving some time in January 1962. According to present intentions the trip will include such places as EA6, ZA, SV, YK, 4X5, EA6, CR5, EA9, VQI, Trolin, St. Marie, Guadalupe, Mayaguez, Isla Europa, VQ8, VQ7, FL, MP4, 5K4, CR8, 9M1, AC4, AC3, AC5, CR10, etc., etc.—76 countries in all. Just what form of transport is to be used is not stated. (A flying carpet maybe.) S.B. and c.w. operation is proposed from every location on the list if the necessary permission can be obtained. Good luck, Gus, and it is hoped your fantastic plan achieves reality.

—Ray Jones, VK3JR, Federal QSL Manager.

FEDERAL AWARDS

Kuwait-Saudi Arabia Neutral Zone will be given new and separate listing in the Australian D.X.C.C. Countries List. This neutral zone is located between Kuwait and Saudi Arabia and is territory over which sovereignty has not been established and from which Amateur Radio activities have recently been conducted. Add to list published in "A.R." in January 1961.

—A. Kissick, VK3KB, Awards Manager.

NEW SOUTH WALES

GENERAL MEETING

The June general meeting of the N.S.W. Division was held at the customary meeting place, Science House, Gloucester St., Sydney, with the President in person, VK2YB, presiding. On this occasion the attendance was somewhat disappointing as only some 37 brave souls defied the elements.

However, those present heard a very good lecture on Transistors, and the lecturer for the evening, Eric Warren, of the Dept. of Civil Engineering, University of New South Wales, discussed in detail many of the types of transistors which are in daily use already, or which are being developed for future use. Eric traced the methods of construction of such types as PNP, NPN, drift transistors and Mezer types, dealt with their electronic structure and further explained the typical operation of various types.

Developments at present in hand are in a most interesting stage and it would appear that in the years to come that transistors will completely supersede valves in any application. The vote of thanks to the lecturer was proposed by Norm Beard, 2ALJ, and passed by acclamation.

The Federal Councillor, Pierce Healey, 2APQ, made a lengthy report and also dealt with agenda items which will be dealt with at the next Federal Convention to be held in Perth at Easter 1962, and for which any agenda items which members may have are urgently required for inclusion.

COUNCIL MEETINGS

The Council of the Division is meeting bi-monthly at Headquarters, 14 Acheson Street, Crown St., and again on 30.6.61 all Councillors were present in addition to some visitors. A letter of resignation was tendered by Norm Beard, 2ALJ, who had been ill with the Division incompatible with his daily duties, in another speech. Council accepted his resignation with regret and placed on record the thanks of the Council and members for the untiring work Norm has done on our behalf over many years.

SILENT KEY

It is with deep regret that we record the passing of:

- VK4EG—E. ("Ted") Gold.
- VK4PN—Russell F. Roberts.

The vacancy thus occurring on the Disposal Committee was filled by the election of Keith Jefferson, 2BZ, to that post. The further change is that Vol Molewsch, 2VO, was elected as Disposal Secretary.

By the time that this column appears in print the 1961 Call Book will be available and also the sheets are available to those who require them in the many contests which will be held in the coming months. Further details will be included in your Bulletin and on the weekly broadcasts.

A sub-committee was formed to allocate the Adams Trophy, which is given annually for the best VK2 article appearing in "Amateur Radio" in the month of June. The committee consists of Harold Buttrif, 2AAH; Vol Molewsch, 2VO, and Ted Whiting, 2ACD.

The Southern Tablelands Zone Club of Goulburn has received its call sign, VK2ATR.

JUNIOR RADIO CLUBS

Following a proposal by Reg Black, a committee has met to discuss the formation of Junior Radio Clubs in schools, colleges and other youth organisations.

It has been felt for some time that there is a need for such a means of encouraging the study of radio theory, thus laying the foundation for a future career in the electronics field. Council has discussed the report with the two councillors who attended this initial meeting, 2AAH and 2MP, and has accepted the scheme in principle.

Following further meetings of the committee, undoubtedly steps may be taken to implement the proposal.

TAPE SERVICE

Again a reminder to the country clubs and groups that there are several excellent lectures on tape which will allow of the lecturers we have here in Sydney to be heard in the country. We have several lectures on tape, thanks regarding these tapes during the past few months and can commend them to you.

The tapes available are as follows:—

- T.V.I., by Horrie Onkes, VK2FA.
- Master Oscillators, by Joe Reed, VK2JR.
- Transistors, by Harold Buttrif, VK2AAH.
- V.H.F. Omni-Range, by Peter Griffin, of D.C.C.A.

Further tapes are being organised and all are readily available on application to the Education Officer, who will immediately arrange transit.

AUGUST LECTURE

The lecture arranged for the August general meeting will be given by Harry Edwards, of the University of N.S.W., and his subject will be H.F. and V.H.F. Amplifiers.

The following month (September) the lecture will be on "Transistors in Communication Receivers" and will be given by Bob Zuker, of Commonwealth Electronics Ltd.

General meetings are held at Science House, Gloucester St., Sydney, on the fourth Friday of each month. The meeting is open to all and the crowd and join in an interesting and instructive evening.

SHORT WAVE LISTENERS' GROUP

Cheery greetings to s.w.l.'s in all States, this being the first opportunity I have had to subscribe to the Divisional Notes since the present convention.

Activity in VK2 has been on the increase of late, many letters of inquiry having been received regarding our activities.

At the May meeting at Headquarters, 14 Acheson Street, Crown St., some 20 members enjoyed an interesting talk by Ted Whiting, 2ACD, on S.w./ing. Antennae and Receivers. The next meeting was devoted to a slide programme, to general business at which many matters concerning the Group were discussed. Many orders have been received for our manual on the ART receiver to date and enquiries will be welcomed. This is the first of a series of re-prints of manuals on Australian disposals equipment and manuals on the slide series at the cost of 10/- plus postage to ALL W.I.A. members. Orders should be addressed to the Secretary, S.w.l. Group, at the above address. The batch of 50 have already been sent out and a second batch will be ready immediately. The contents of the 27 pages cover data on each stage of the receiver and the circuits, complete parts list and alignment procedure. Next in the series will possibly be the SCR22.

This July meeting was given over to a talk and demonstration by Vol. 2VO on Modifications of Disposals Equipment which was only one of the many lectures arranged by your committee.



The Full Range of A & R— MODULATION & DRIVER TRANSFORMERS

TRANSISTOR TRANSFORMERS

for the Mullard OC26 Modulator,
featured in "A.R." May '61.

INPUT TRANSFORMER

Type I.T.631

Primary 50 ohms (carbon mike input).
Secondary 1,500 ohms c.t.

Price: £1/16/4, Trade.

MODULATION TRANSFORMER

Type M.T.26

Primary 12.6 ohms c.t. Secondary 7,000
ohms, tapped at 4,000 ohms.

Price: £2/8/8, Trade.

MODULATION TRANSFORMER

Type M.T.30—40 Watts

Semi Universal Type. For impedance
chart and connections, refer "A.R."

February 1961 issue.

New Reduced Price: £7/10/4, Trade.

TRANSFORMERS for

"R. T.V. & H." 10 Watt Modulator
(Dec. 1959 issue).

Driver Transformer Type I.T.630, Price:
£1/16/8, Trade.

Modulation Transformer Type M.T.25,
Price: £2/5/8, Trade.

MODULATION TRANSFORMER

Type M.T.15A—75 Watts

Suitable for modulating up to 150 watts
input to Class C R.F. Amp.

DRIVER TRANSFORMER

Type I.T.588

Suitable for 807s Class B Triodes from
S.E. or P.P. Driver.

Price: £3/10/0, Trade.

DRIVER TRANSFORMER

Type I.T.545

Suitable for AB2 Grids from Triode
driver stage.

Price: £3/16/8, Trade.

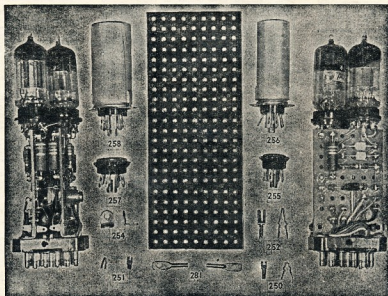
FOR FULL TECHNICAL DETAILS
SEE YOUR NEAREST
A. & R. DISTRIBUTOR!

or

A. & R. ELECTRONIC EQUIPMENT CO. PTY. LTD. 376 St. Kilda Road, Melbourne, S.C.1. MX 1150, MX 1154

REDUCE THE SIZE AND COST OF YOUR NEW EQUIPMENT

TYPICAL
UNITS
USING
ZEPHYR
MATRIX
SYSTEM



Leaflets and
Price List available
from all
leading Wholesalers.



Enquiries invited
from
Manufacturers.

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VIC.
Phones: BL 1300, BL 4556

HUNTER BRANCH

Big success news this month chaps, that first of all some news of the June meeting. Those present were, our distinguished visitor and lecturer for the evening, Maurice Myers, 2VN, and the other welcome visitors Jim 2XKT and Stewart 2AYF, and Mac Jackson. Members' associates there were VKs 2ZNF, 2SP, 2XQ, 2CS, 2AYL, 2AFA, 2XT, 2ZJG, 2ZNW, 2AE, 2ZVH, 2ZL, 2AQR, 2AYL, 2PZ, 2ZCU, 2AYF and 2KX with Messrs. Sutherland, Blyth, Stobbs, Finlayson, Munn, Mullen, McLachlan, Harker, and Forrest.

As you can see from this list the roll-up was the best the Branch has had for some time and the reason, no doubt, was that Maurice was to give his lecture on Radio Aids to Mayors and Members, a pleasure to have someone who is so thoroughly familiar with his subject as our lecturer and with the able assistance of Stewart 2AYF, the evening was an unqualified success. Stewart, I might mention was the man behind the slide projector and we saw everything from the first Australian airline radio installation to the proposed craft to be used on the Kangaroo route one day. We all knew now that AGACS (pronounced AJAX) is something pretty complicated to do with aviation as well as being swell for cleaning the kitchen sink. Seriously though, you chaps reading this who did not come missed something really worthwhile. John 2XQ responded on behalf of the Branch and he was supported by the acclamation of the members.

Did I say big success or did I say—well here it is. No less than three of our associates are well on the way to becoming full members following their success in the recent AGACS exam. They are Gordon 2AYL, and Tony Mullen—Licensed licence qualifications, and Ian "Sherwood" Forrest—also AGACS. Congratulations to all three of you chaps and hopes that we'll soon hear you on the bands. Gordon is well under way I believe and has already procured a piece of aluminium and has bent it in the shape of a chassis. I know he has the crystals for his converter, so it seems that all that is needed now is a little bit of application and an application form before we hear his dulcet tones gracing the ether.

As for Tony, rumour has it that he does not intend to give his limited licence exam, that he is studying hard for the Morse. This probably is the reason why a poor featherless budgee has been seen sitting on the front fence of this certain Toronto residence, whilst what sounds like an ancient Egyptian hieroglyphic Morse character. Poor little bird.

And Ian, our youngest examiner, already has removed his duplicate tx and rx and has scribbled because, he says, time will be short between now and the Leaving Certificate and he intends building his own rig then. I suppose we must forgive "Sherwood" for this. After all, he did get the quiz at seventeen! Another resident of our district, or should I say, past time resident, who was notified of his limited ticket pass, has asked that his name remain anonymous so that he may have a lash at the Morse and pass, next time. Big Secret! I do know that he'll be almost a cert for the next exam.

And what about the OMAs who have had their tickets for years. What are they doing? Well, there is one who knows that he is not doing what he did the other morning. This gentleman, who reckons he's in the city of Newcastle, has periodically claimed that he has a view of the Phenyle swamp from his front verandah, has really taken the biscuit this time. The other Sunday he was heard to say that it was fine and warm with hardly any breeze but not 500 yards distant it was 60 degrees minus with seven-eighths cloud and blowing a gale. Now, we know he has remote control from his bedstead! Same gentleman, different story, the other day was heard by his XVI, while putting out the milk bottles. But here's the pay-off, his well isolated voice came from the speaker of a broadcast transistor portable held in the hand of a grinning, cellophane youth promending nearby. Enter Shannon singing and dancing!

And while on the cellophane with Z, the v.h.f. boys are beginning a worthy enterprise in the form of activity mornings or evenings, whichever society. Those present on the air, at the latest of these were 2AYF, Stewart, with Neil 2ZCU, Stan 2AYL, Merv 2AAM, Ron 2SRS, Fred 2ZP and Ian 2ZJG. If you absent Z boys want some details of how you can get in on all this, contact any of those mentioned above and they will help you all they can. After all, that's what it's all for, helping and the exchange of ideas.

One day soon, Norm 2ZNF looks like joining the bobby as my spen tell me he is almost ready to fire. And as for mobile

operation, Bill 2XT has forsaken his thunderbird and is progressing with some 144 gear in the XT Chevy. Any resemblance between this vehicle and a tram is purely coincidental. I suppose that Bill is preparing for Blackalls and if any of you other chaps are preparing also, remember that it is on the Saturday of the Six-Hour Day week-end that we expect to see you at the Annual Dinner. This should be bigger and better than ever before and we are changing the venue to the Explorers Hotel. I am not able to say who the speaker will be, but you will be notified in the Bulletin as the time draws near. As for the field day, follow all cars carrying weird beams and things and let's have a good roll-up. After all, it is a great satisfaction to the organisers when many members come along to such a worthwhile activity as the field day.

Another member who has had a field day lately is Lionel 2CS. From work upon the Donald Duck he was called to an emergency the other day when one of his junior admirers asked him to help with some 2T Mc. activity, to wit radio control of a model. Lionel now knows a great deal more about this form of Amateur Radio than he did before. And, as you know, the way to know about a model which he whistles from the top of the billiard table, and it responds. I'm beginning to think that Bob 2AQR does the same thing with the balls themselves, the way he defeated me the other night.

Bob, by the way, has been seen lately carrying an ATS under his arm and perhaps this is the forerunner of further work on the h.f. bands. Louder signal from Westy please! I know what it is.

The local t.v. station is established on the top of Sugarloaf, those in the shadow will worry not about t.v. Then we'll hear some modulation. Another man with modulation a plenty is Jim 2AHT. What this man does to my speaker cone is nobody's business. I must arrange some form of early warning. I've not worried it early 2SF recently, but it is said that he now has a room in the house where it's warm. This may help to promote a healthier signal and a more frequent one. How about it, Varley?

And I should talk. However long it is since a signal was heard from Bolton is anybody's guess. That Mullen man came and cut down on the tree and took the tree with him.

It is reported that our hard working Morse practice man from Kotara, Fred 2AEE, had a strange experience. A junior acquaintance of his sat in front of the t.v. set and, seeing no picture, asked why it was that Mr. Eade got green worms on his t.v. and they got none. This seems to suggest that the t.v. set is c.r.o. somewhere about. Of course I cannot vouch for the authenticity of this story.

Another member from the same vicinity, one Raspberry Jam and his Juliet, have returned safely from a journey to far away VK4 in robust health and sporting a well filled log book. You were putting in a f.b. signal Les. Someone else who is getting a f.b. signal now is Belmont Bob. He decided to put an aerial on his 1135. It goes much better now thank you. He's thrown the string away but he does have a problem. How to get a half wave on 80 in 108 feet? I do know one active member who reckons that a folded dipole would do the trick. After all, it is only half as long as a dipole—or is it? Was his face red?

And speaking of red faces, reminds me of the colour Stewart displayed before his eyes when the man from the contractor told him how much it would be to run wires to his new shack. Another 8 db. would have bought him a nice new thunderbird. The signal is progressing though at a great speed and power or no power, it should be finished soon.

Ron 2ASJ has been doing well lately and is settling in a mighty signal on 160. I think it must be a good place for Amateur Radio from the sands of Stockton, but not so good for t.v. says Jack and that is why you'll not hear these two after 1000.

Activity from Cessnock on 283 may be forthcoming shortly according to what Chris 2PZ and Peter 2AYL have said. There is talk of running a test with a test with a test with a test the other day that the big mast at Chris' was resplendent with a new coat of aluminium paint, no things are looking good anyway. Harry 2AFA is putting in a mighty signal from Terahla and it's real f.b. to hear him on regularly. I think Harry is another oppressed Amateur who waits for the local t.v. to begin. I do hope that when the joyous day arrives many of us will have less worries than at the present.

By the way, if you have any words, come to the meeting on Friday week, that's the 11th, and if they are anything to do with s.b.b. then there will be somebody there to help you along. That man will be Leo 2AC,

ADVERTISEMENT

CAN U WK BREAKIN?

rr

HWS UR NEW TX?

wks fb, but hard to make it luk gud

HAVE U HRD ABT THE NEW AUSTRALIAN TX KITS!

no

U CAN GET EM AS FINISHED SHEET METAL WID LETTERED FRNT PANEL ES KNOBS, OR AS KITS IN STAGES OF COMPLETENESS TO SUIT THE GUY WID JUNK IN HIS BOX

painted?

CABINETS ARE, BUT CHASSIS CADMIUM PLATED

hwmny watt tx?

150 OR 75 WATTS IN CABINET ONLY 16 BY 9 BY 9

EEK - vfo or xtal?

VFO

hw abt price?

BETTER THAN OVERSEAS STUFF

abt time - hw can i find out more?

SEE NEXT MONTH'S A.R.

fb

42-5727 (Vic.)

and what he doesn't know about sideband isn't worth knowing. So let's have another good turn out even if it is a bit cold. If you feel like seeing this whistle demonstration then you'd better come to Bill's (2XT) on the fourth Wednesday, which is 23rd. He will show you. The monthly meeting is held at the University of N.S.W., Tighes Hill, and all the locals around Cook's Hill know where Bill lives. See you there. 73, 2AKX.

BOORAGUL HIGH SCHOOL RADIO CLUB

Good news from us this month chaps. Ian has his exam passed and is waiting for his ticket. He may have the call sign by the time this appears. We of course already have ours. If you are looking for us and you hear 2ATZ, then there we are. The boys are looking for contacts on Mondays, Wednesdays and Fridays, 1300-1320 and 1830-1815 hrs. The crystals we have are 7050, 7075, 7100, 7125 and 7140 kc.

Thanks to all concerned, we now have a transmitter made by the club members with a 1625 in the final, about 20 watts and plate and screen modulation. Thanks to all those chaps who have given us a QSO and especially

to Harry 2AFA and Jim 2AHT, who have helped us to get a reasonable signal on 40. We may even be on 30 one day Jim! Look for us in Education Week also. We hope to be on nearly all day on 11th August, our open day. See you then. 73, 2ATZ.

BLUE MOUNTAINS SECTION

The usual monthly meeting was held on 18th June in the club rooms at Lawson where seventeen members were present to hear a lecture on "Antennae," etc., from Harold 2AAH. Those that were present were 2ZHZ, 2ADF, 2AVN, 2ART, 2ASZ, 2ABK, 2NK, 2AVK, 2RM, 2ADA, Noel Walker, Derek Boyd and Jack Ferris.

The meeting closed in record time at 8.55 p.m. and Harold took over with the lecture of the evening discussing all types of antennae including mobiles, which lasted two and a half hours. Super followed and Harold was still answering questions at midnight, which added more wood to the fire. Thanks Harold for a very excellent lecture and we all hope you enjoyed your stay with us, even though it was windy.

Warwick 2ZMS was duly welcomed for the first time after not long moving down from the "top shop" at Greta to Mt. Druitt. Warwick has a very nice sig. on 1 mX using a converted 322 tx and receives with a xtal locked converter to a h.f. receiver and then a QSR, some very nice tubes or so. So all you have to do is to put your oscillator on and 2ZMS will hear you.

Up the mountains, Dave 2NK, at Lawson, is almost on the air with 2 mX and 40 mX mobile. Dave has a few trips to make as well as "Operation Picnic" soon and is killing two birds with one stone. Good for you, Dave. Coming down the mountain to Blaxland, my spies tell me that Norm 2QA has been on 40 mX and I understand that Norm talked 2UH (ex-2ASV) mobile from Springwood down to yours truly at Glenbrook. Kev, was slightly off course, what! Apparently he had been calling 2ADA from 1400 with no luck; no wonder, the receiver was off.

Al 2ZFB is building new gear on 6 mX to take away to New Guinea and I believe he will be away for two months. Looks like Al is setting up to work back home. Jack 2AAT and 2ADA mobile to Katoomba on Saturday to see the snow, barbecued lunch at Wentworth Falls, and a good time was had by all.

Ken 2AVN is working on his modulation for 80 mX and hopes to have it "Al" by Friday, 14th, which reminds me that the meeting decided to have a general get-together on the second Friday of each month, starting from 14th July, on 80 mX and 2 mX at 2000 hrs. -2ADA.

VICTORIA

MIDLANDS ZONE

An informal but useful meeting was held on 1st July to promote activities in this zone which have been sadly neglected in recent years.

Much to the delight of the organisers, fourteen members attended and amongst these were 3FO and 3ZLJ from Maldon; 3ZKV, 3JW, 3UR, 3ZFB, 3ACN, 3QK, 3JV and 3FY from Bendigo; 3BX from Quambatook; 3SV and 3ZIK from Castlemaine, 3APJ from Kyneton.

The meeting was suggested by a number of these operators who have been conducting a two-metre hook-up every Thursday night, which, although informal, has been noteworthy for its regularity and it was felt that this

ATTENTION ALL VICTORIAN AMATEURS

Until further notice the Victorian Division rooms at 478 Victoria Parade, East Melbourne, will not be staffed during the day, and no meetings will be held there.

Please listen to the Sunday Broadcast for details of the new meeting place and the office phone number.

All mail should still be addressed to P.O. Box 36, East Melbourne, C.Z. Victoria.

would be a good basis on which to institute an official Zone hook-up. It was so decided and in future will commence at 7.15 every Thursday night.

The only exception to this programme was to have the hook-up on 80 mX on the first Thursday of each month to provide for those members without 2 mX gear and to act as a stimulant to the Z call holders to obtain their full ticket.

A programme of future activities has been tentatively drawn up and the first outing in September is to Mount Tarragower, the exact details of which are to be discussed in the Zone hook-up so that those who are interested can fire up the converter or wait until the next 80 mX hook-up in August.

At the end of the meeting, which at times developed into a v.h.f. group discussion, Neville 3ACN showed colour slides of the many W Hams he visited, his recent trip to the States. Although the faces of these Hams were not known to many, their voices were, as several are regular occupiers of the DX bands, probably the best known being Newt WIBC.

The outcome of the meeting was that a great deal of re-building will be conducted to t.v.i. proof low frequency tx's and to construct new v.h.f. gear.

3FY is endeavouring to t.v.i. proof a 322 despite the sceptics who say it can't be done. Although the book says it can, 3ACN is acquiring 150w. on 2 mX which, apart from helping him to join the Zone hook-up, will probably delight the ears of v.h.f. enthusiasts in the rest of VK3 land. With a converter feeding into the 75A4 and stacked five el. yagis in the highest spot in Bendigo, 2 mX contacts

*You will hate yourself
if you miss the
1961 VICTORIAN
STATE CONVENTION
during the week-end
30th Sept.-1st Oct.*

SATURDAY, 30th SEPT:

- Display of Commercial Equipment.
- Combined Convention and Annual Dinner.
- All at Scitiss Hotel, Collins Street.

SUNDAY, 1st OCT.:

- A Day in the Hills at Ferny Creek.
- Own Picnic Ground and Barbecue.
- Transmitter and Fox Hunts.
- Disposals Gear.
- Novelty Events, Children's Games and Competitions, Sweets, Drinks, Ice Cream and Shelter.

★ Plus the Grudge Match of the year—Duck Talk v. Ancient Modulations.

★ Special interzone trophy.

★ We will be happy to arrange your accommodation.

NOTE.—All visitors are requested to bring with them one pair of headphones, one germanium diode one tuned circuit, and cunningly contrived to operate as a receiver covering freq. band 3.5 to 4 Mc. No prize will be awarded for the nearest construction. This is most important as it will be of the greatest assistance to your successful participation in several never-before-attempted contests.

COST—DINNER £2/5/0 a head (V.I.L. and X.C.S. welcome). Registration 10/6 a member.

Special concession if you have held a licence for more than 35 years or have travelled more than 300 miles to the Convention. So reserve the week-end 30th September and 1st October, for the greatest, most-exciting and the biggest Convention ever held in Victoria.

LOW DRIFT CRYSTALS FOR AMATEUR BANDS

ACCURACY 0.02% OF
STATED FREQUENCY

3.5 and 7 Mc.
Unmounted, £2/10/0
Mounted, £3/0/0

12.5 and 14 Mc.
Fundamental Crystals,
"Low Drift,"
Mounted only, £5.

THESE PRICES DO NOT
INCLUDE SALES TAX.

Spot Frequency Crystals
Prices on Application.

Regrinds £1/10/0

MAXWELL HOWDEN

15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA



TEST EQUIPMENT

HEATHKIT GENERAL PURPOSE 5" OSCILLOSCOPE KIT (OM3)

"Y" sensitivity 0.09v./inch, 4 c.p.s. to 1.2 Mc. Rise time 0.25 microseconds. Sweep 20 c.p.s. to 150 kc. Input 105-125 v.a.c. 50/60 c.p.s. 65 watts. Weight 22 lb. Price £44/12/-.

HEATHKIT EXTRA DUTY 5" OSCILLOSCOPE KIT (O-12)

"Y" Sensitivity 10 mV/cm., 3 c/s. to 5 Mc. Rise time 0.08 μ sec. Sweep 10 c/s. to 500 kc. Input 240 v.a.c. 50 c.p.s. Weight 22 lb. Price £94/8/-.



O-12

HEATHKIT TV ALIGNMENT GENERATOR KIT (TS4A)

When used with oscilloscope gives you all essential facilities required for alignment of f.m. t.v. 5.5 Mc. crystal marker provided. Input 110 v.a.c. 50/60 c.p.s. 50 watts. Weight 16 lb. Price £55/6/-.



TS4A

HEATHKIT AUDIO GENERATOR (AG-9U)

10 volts, 10 c/s. to 100 kc. pure sine wave. Switch-selected frequencies/attenuation. Weight 10 lb. Price £50/1/-.



AG-9U

HEATHKIT CAPACITANCE RESISTANCE BRIDGE (C-3U)

Measures capacity, 10 pF. to 1,000 μ F. Resistance 100 ohms to 5 meg-ohms. Power Factor. Weight 7 lb. Price £23.



C-3U

HEATHKIT AUDIO VALVE-MILLIVOLTMETER (AV3U)

1 mV. to 300 V. a.c. 10 c/s. to 400 kc. Weight 6 lb. Price £36/12/-.



CM-1U

HEATHKIT DIRECT READING CAPACITANCE METER (CM-1U)

Full-scale ranges of 100 micro-microfarad, 1,000 micro-microfarad, 0.01 microfarad, and 0.1 microfarad. Easily built in a few hours. Price £38/6/-.

HEATHKIT VACUUM TUBE VOLTMETER (V7A)

The world's largest-selling V.T.M. Measures volts to 1,500 (d.c. and r.m.s.) and 4,000 pk. to pk. Resistance 0.1 ohm to 1,000 megohms. D.C. Sensitivity: 7,333,333 ohms per volt. Weight 17 lb. Price £32/8/-.

• World's Finest Build-Yourself Kits

• Own Now—Pay Later! A small deposit brings you the equipment you need now—from Warburton Franki

STEREO EQUIPMENT

HEATHKIT HI FI STEREO 16 WATT AMPLIFIER (S-88)

Superb reproduction for the man who wants the best in Hi Fi. Only 0.1% distortion at 6 w./chnl. Many special features. Price £72/2/-.



S-88



FM4

HEATHKIT HI FI F.M. TUNER (FM4)
Range 88-108 Mc. Quieting Sensitivity 2.5 μ V. for 2 db. Hormone distortion less than 1%. Frequency response 12 db. 20-20,000 c.p.s. Price £36/12/-.

HEATHKIT HI FI RATED 14/14W. STEREO AMPLIFIER KIT (SA2)
Delivers full 14 watts per stereo channel (28 watts monophonic) to drive your most demanding stereo system with ease. Weight 23 lb. Price £66/10/-.



SA2

AMATEUR EQUIPMENT

HEATHKIT "APACHE" HAM TRANSMITTER KIT (TX1)

Combines quality, versatility, style and low cost. Provision for single sideband adaptor. "Spotting" push-button for "zero beat". Low level speech clipping and time sequence keying. Offers 150w. phone and 180w. c.w. input operation. Price £360/1/-.



TX1

HEATHKIT "MOHAWK" HAM RECEIVER KIT (RX1)

Pre-assembled, aligned front-end assembly. Crystal controlled oscillator for no-drift reception. Provision for 6 and 2 metre conversion. Similar in styling to TX1. Covers all bands, 160 through 10 metres. Price £310/5/-.

HEATHKIT BALUN COIL KIT (B-1)

Match unbalanced coaxial lines with this convenient transmitter accessory. Weight 5 1/2 lb. Price £10/1/-.



SB-10

HEATHKIT SINGLE SIDEBAND ADAPTOR KIT (SB-10)

Covers 80, 40, 20, 15 and 10 metre bands, the adaptor produces either U.S.B., L.S.B. or D.S.B. signals with or without carrier insertion. Price £100/16/9.

HEATHKIT C.W. TRANSMITTER KIT (DX-20)

Best watts for £ value. Clear sign. Single knob band-switching. Covers 80-10 metres, using crystal or an external V.F.O. Weight 18 lb. Price £40/6/-.

MAIL ORDERS delivered free in the metropolitan areas of Sydney, Melbourne, Adelaide and Brisbane. Enclose cheque or M.O. Write for details of Easy Payment Plan.

FREE CATALOGUE describing the big range of fully imported Heathkits for stereo, amateur radio, testing and marine available on request from your nearest Warburton Franki office.



WARBURTON FRANKI

MELBOURNE: 359 Lonsdale Street — Phone 67-8351
PERTH: Tough Instrument Service Co., 993 Hay St.
BA 7615 (Prices slightly higher in W.A.)
SYDNEY: 307 Kent Street — — — Phone 29-1111
ADELAIDE: 204 Flinders Street — — — Phone W 1711
BRISBANE: 233 Elizabeth Street — — — Phone 31-2081

SDW, a keen 7 Mc. habitue of many moons, seems to have lost interest in the hobby of late. He tells me that he is not very active these days and feels no pangs of remorse. However, he has not the first notion of what he won't won't be the last. Wait and see, Doug.

Max GGF can be heard most nights mulling over his way home from town, and judging from the number of VK3s he's calling him, he must be putting an extra good signal over there. You should be able to hear Max's Teds (S&K) when the mad rush was on at the buy and sell night for the Morse keys. He was tickled pink and could not have been happier if I had been selling him the keys. He was also selling me some items for occupation on his beloved 7 Mc.

Paid a flying visit to Lloyd 50K the other night. As a matter of fact I had bitten him for some time. He used to use hypodermic, ripodermic, well anyway, those "poly-thingamebobs that have such universal and many uses in our hobby, and whilst I was there, he gave me a practical demonstration of how much "juice" he could pick out of the sky from the A.B.C. station, SAN. This station is one of the best in the country, and QTH and he tells me that he is quite upset that both SCL and SAN are moving away in the near future. SCL goes to 50kw, and SAN looks like to increase, see what I mean? The way, Lloyd, my XYL sat on the paper parcel in the back seat of the car and called me a naughty word. Did she? The point? She didn't! Keep your English ripple.

George SRX, our genial QSL officer and lame certificate hunter, managed to snare plenty of publicity in the daily paper, photo, photo and all. Nice work OGM, but how long since have you had a Byer tape recorder in your equipment? Gordon SXU and me SWX noticed at the meeting night. He tells me that he is very busy at the University these days, as a student and not as a chalk wielder. Have you had six handers yet, OGM? I have a number of months ago made passing reference in these notes to the Adelaide University Amateur Radio Club, and also to the fact that it was a honorary member (which it passed through the said University on my bicycle one day). Imagine my embarrassment and consequent shrinking within myself, to read in the next edition of these notes, that "Splatter," the following, which I quote as a matter of interest and also as an excellent example of the Editor's sense of humour: "Mr. Parsons (to us) has been seen at to favour us with 17 lines of illustrious prose in that celebrated daughter magazine of ours 'Amateur Radio'. As a matter of academic interest it was decided at a meeting of the Radio Club sub-committee for the advancement of technical knowledge at the Very High Frequencies that the club should send 'Pansy' to ride his bicycle through the grounds once again if it will stand the strain, and make himself known to us. We are noted for our hospitality and the bones of the last Radio Inspector to visit us are on display at the bottom of the lift well."

So there all for that generous invitation, but feel that I must refuse the obvious rise in social status of sharing the lift well with the present tenant!

He who as sleep now, so here goes, and don't forget you asked what was on the slide "I distinctly heard you, it's on your own head."

There was a young man with a hernia Who said to his doctor "Goldernia" When fixing my middle—don't you dare

With matters that do not concerna."

—SPS (PanSy to you).

STOP PRESS

[What Divisional scribe did not know that a tribe member had a broken rib? My, the intelligence service is not up to standard!—Ed.—and still awake.]

ELIZABETH AMATEUR RADIO CLUB

The Elizabeth Amateur Radio Club station VKSLZL will be on 40 and 40 metres during the Elizabeth Sixth Birthday Celebration on November 18, together with a number of other Elizabeth stations. We would appreciate some contacts on that date.

- REPAIRS AND CONSTRUCTION,
- WIRING AND TESTING,
- RECEIVERS AND TRANSMITTERS,
- T.V. ALIGNMENT.

ECCELESTON ELECTRONICS

146a Cotham Road, Kew, Vic. WY 377

WESTERN AUSTRALIA

News is very scarce this month due to several causes, the main ones being end of financial year activity, farming test cricket and an 80 mpx very poor conditions for this time of the year.

The monthly meeting at the Perth Tech. was very well attended, the main attraction being an outstanding lecture and film on the evolution of time pieces and space travel, leading up to the latest in wrist watches, powered by a mere cell, that is, a transistor, a real fork. Many envious looks were given the one which was passed round for inspection. The lecture was given at the start of the meeting to enable some of the Division members to attend. After the lecture the normal meeting was held and quite a number of unfamiliar faces were to be seen. One visitor who is becoming quite a regular attendee was 6XCO, even though his QTH is over 140 miles from Perth.

There has been some activity on the higher bands, but it is very spasmodic. Skipper 6WS has had contacts and Bob 6RG is heard occasionally in contact with Eastern States stations. 40 mpx has had activity on the band during the day light hours, from the shift workers and gentlemen of leisure. Henry 6DC, Bob 6RG and Horrie 6GD are heard occasionally on these bands.

Clem 6CW's voice is beginning to filter through the empty paint tins and layers of paint. It is much stronger since D.I. has a window put in Clem. Ian 6CL is not heard here very often lately, I suppose he is tidying up for R.D. Your score last year nearly did the job, Ian. 6WL is also trying to quieten his t.v.i. gremlins, but they keep on bobbing up. Hope you soon get them tamed Les. We miss the mpx on 80 mpx. 6RY is a call which is not heard often enough on 40 mpx and 80 mpx. Should hear more of you Roy, but your c.w. sessions to 6 mpx are appreciated. Bob 6ZZ manages his activity contacts through his network of power lines. They are certainly up against you Harry. 6RX is heard occasionally on 20 mpx and you are making many friends. Bob 6WV is a good one.

Members will be interested to know that our "W.A. Bulletin" has now been registered as a periodical publication and is now out at bulk rates. Any items of interest, articles, Chloie items, etc., should be forwarded to 6LS. We note 6ZCS has been confined to bed and trust that Len is on the road again by the time these notes appear. 6ZCKP per 6LS.

TASMANIA

Remember the R.D. Contest, the second week-end in August. Take part, and submit your log before the end of August so that your efforts will help the Division retain the trophy. We challenge the other Divisions to give us a good fight, we will swap a number with anyone entitled to participate, so go to it.

On the night of 14th June, five Hobart stations entertained members from the Short Wave Listeners' Group by entering into a lengthy QSO the 80 mpx band, and the Division, the stations taking part to know that their efforts were appreciated.

Len TLE has shifted his QTH from just below the 100 mpx to Lindistarte, where he has temporary accommodation pending the construction of his new home in that locality. Len is a competent operator and will be using the aforesaid t.v. transmitter will not now appear across the 6 mpx band.

At the July meeting of the Division, we were pleased to hear of the Bill 6RN and the history and nature of air navigational and radio aids. We can only be proud of Australia's contribution to the advances in both fields over the years, with government and private sources. The wonderful record of air safety in our land is adequate testimony to the excellence of our navigational aids.

Ken TKA is delighted that a volunteer has offered his services as assistant secretary, and we welcome our Associate member, Eric Granger, into the Division.

Night time conditions for the past month have been generally poor, except for the 80 mpx band and a few days when the band was severe static for about ten days. So it can be said that activity within the Division has been very slight.

As Federal Conciliator, I seek your assistance in one matter. It is now time to forward items for inclusion on the agenda for the next Federal Convention. If you have any such items for consideration, please forward them to me as Federal Conciliator or to the Divisional Secretary. This matter is of great importance, please give it the consideration it deserves.

NORTH-WESTERN ZONE

The year is fast slipping by with the Remembrance Day Contest hard upon us once more. May I take this opportunity to wish everyone the best of luck in the ensuing battle, but may Tasmania once again be successful.

Not a great deal of interest has taken place during past month, not even much DX as I believe has been out.

The July meeting was as usual, it being a social one, and I was not a little disappointed that more did not attend to avail themselves of the excellent information given out by Ken 7AI in part one of his lecture on s.s.b. Ken has gone to a lot of trouble in preparation of this lecture. I wonder who will be next out of this Zone to go onto s.s.b. Seems to have a lot in its favour—perhaps it doesn't sound so much like a wagon load of monkeys on a proper s.s.b. rx. Anyway, hope it won't be too long before Ken can get round to finishing the lecture.

At the last meeting supper constituted a minor affair as there was a colossal accumulation of "junk" (and some of it was just that) to be disposed of and the auction took quite a considerable time, the night having given us a lot of nothing to do. I am sure, sincerely hope Zone funds were amply added to. This month also gives us our Zone Annual Meeting. I wonder who the new office-bearers will be.

HAMADS

Minimum 5/- for thirty words.

Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to provide an equipment which is of the personal property. Copy must be received at P.O. Box 36, East Melbourne, C2, Vic., by 8th of the month, and remittance should accompany the advertisement. Notices are now accepted in Hamads. Dealers' advertisements not accepted in this column.

FOR SALE: Central Electronics s.s.b. exciter, type 10A, including power supply, VOX, anti-trip unit and coils. In first class order, cheap. VK3AHR, 93 Yarrab Ave., Balwyn, Vic. K8-4203.

SELL: AR7 Receiver in good order, modified to receive s.s.b. and coil boxes bandspread and include 28 Mc., pow. supply, spkr., spare tubes, manual, etc. £28/10/-. Also wanted, booklet on Walkie-Talkies BC611F VK45SS. 35 Whynot St., West End, Brisbane, Qld.

SELL: BC453 Qser, £3/10/-, also quantity of crystals, 7 and 3.5 Mc. (mainly FT243) at 10/- each, and around 6900 kc. live for £1. Roth Jones, 131 Queen Street, Melbourne, Vic.

SELL: Bendix BC221AG Frequency Meter with power supply, calibration charts, excellent condition, £35. VK3AF, 76 Newman Avenue, Camp Hill, Brisbane. 98-1774, 98-4418.

SELL: TR1196A and No. 11 Sets, both new and complete. 23-pin plugs suit MN26. Command Recrs.: 190-550 Kc., 3-6 and 6-9 Mc. Xmitters: 5.3-7, 4-5.3 Mc. and ant. relay unit, cheap. M. J. O'Brien, C/o P.O. St. Ann Remo, Vic.

WANTED: Cheap, Super Pro, AMR200, for re-building, any condition provided tuning and i.f. intact. C. Serle, VK-3ARX, Box 260C, Melbourne. Phone 60-1761 (day).

WANTED: Johnston Match Box Coupler. Particulars to VK3OM, Phone 560-9215.

WANTED: World-wide copy of "Call Book Magazine" published between 1936 and 1939. Will pay £10 or over. W. Nestorowicz, 46 Rabaul Rd., George's Hall, via Bankstown, N.S.W.

WHAT'S BEHIND THIS LABEL?



SUPER RADIOTRON VALVE MANUFACTURE

Ever stop to think about the "behind the scenes" story? Here at A.W.V. we are only too happy to discuss our products, especially Receiving Valves.

At the Rydalmere factory a staff of over 1,000 skilled men and women use the accumulated knowledge of 29 years to produce a range of Receiving Valves suitable for all applications. But! here as in other Valve Company departments, the finished product is by no means the end product. All Super Radiotron receiving valves are subject to a series of stringent tests to ensure long life, lasting quality and excellence of workmanship. Only after these many tests have been passed are the valves branded and packed in the distinctive red and blue Super Radiotron cartons.

From mounting, through sealing, to testing and packaging, one characteristic symbolises all Super Radiotron products — the utmost care during and after manufacture.

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.
SYDNEY — MELBOURNE — BRISBANE



BACKED BY TWENTY-NINE YEARS
OF ELECTRONIC EXPERIENCE



AMATEUR BAND H.F. TRANSMITTER and RECEIVER COMPANION UNITS

MODEL G222-TR TRANSMITTER

Six H.F. Bands—80 to 10 Metres

Main Features Include:

- Simple, rapid changing of operating frequencies and bands.
- Rapid changing from phone to c.w. operation due to simple switching arrangement.
- "Transmit-Receive" switch simultaneously switches the antenna connection for speedy changing from transmission to reception.
- 6146 tube in the final providing transmitting rating of approximately 65 watts on phone and 75 watts on c.w.

★ Amateur Nett Price: £111/3/8

F.O.R. MELBOURNE

Plus 12½% S.T.

MODEL 209-R RECEIVER

- Designed exclusively for Amateur Band operation.
- 12-Tube (plus 1 voltage stabiliser, 1 current stabiliser, and 2 selenium rectifiers) H.F. Communications Receiver.
- **Selectivity**—Five positions: Normal, Xtal 1, Xtal 2, Xtal 3, Xtal 4.
- **Reception of S.S.B.**: Amplifier and detector circuit for S.S.B. signals, upper and lower sidebands, with carrier re-insertion.
- **Sensitivity**: Better than 1 microvolt for 1 watt audio output.
- **Antenna Input**: Balanced or unbalanced.

★ Amateur Nett Price: £138/8/2

F.O.R. MELBOURNE

Plus 25% S.T.

All Prices are subject to alteration without notice.

BOTH UNITS AVAILABLE FROM FORTHCOMING SHIPMENTS

Technical Leaflet giving full details available from:—

Sole Australian Factory Representatives:

Cable: "Cunnig"

R. H. CUNNINGHAM PTY. LTD.

VIC.: 8 BROMHAM PLACE, RICHMOND, 42-1614

N.S.W.: 29 GIBBS ST., CHATSWOOD. 40 0218

S.A.: ROOM 10, ANGAS HOUSE, ANGAS ST., ADELAIDE. 8 7370

QLD.: 43 BOWEN ST., BRISBANE. 2 3755

W.A.: KING'S PLACE (off 12 King St.), PERTH. 21 2126